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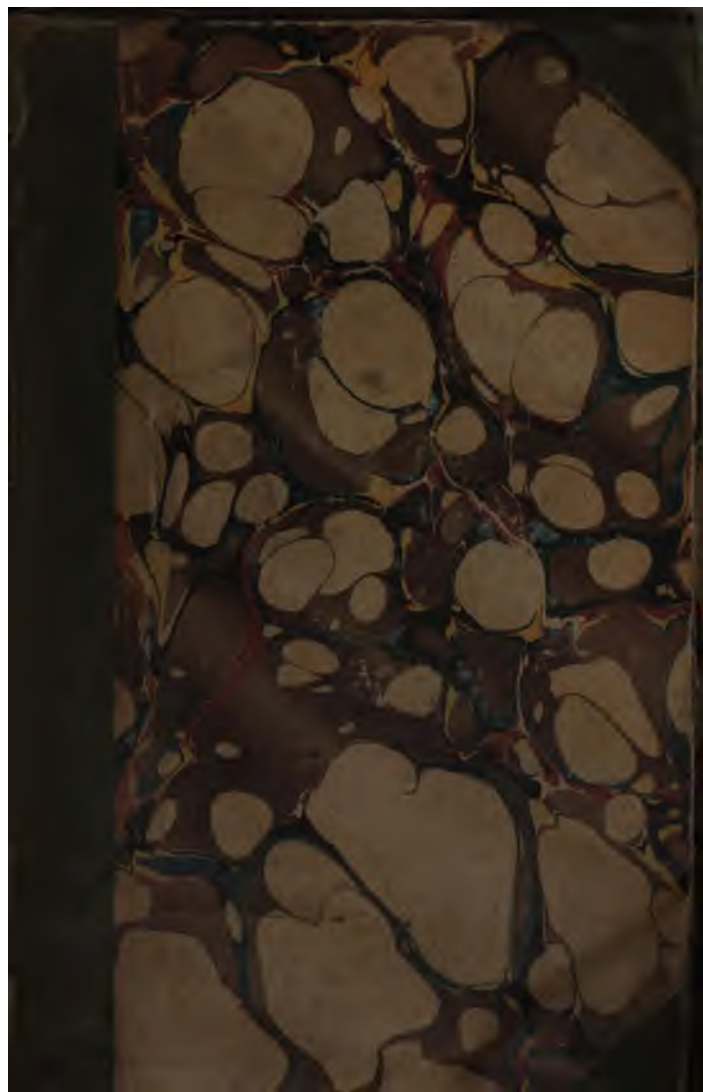
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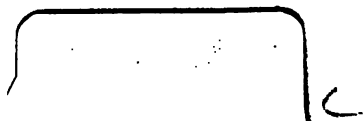
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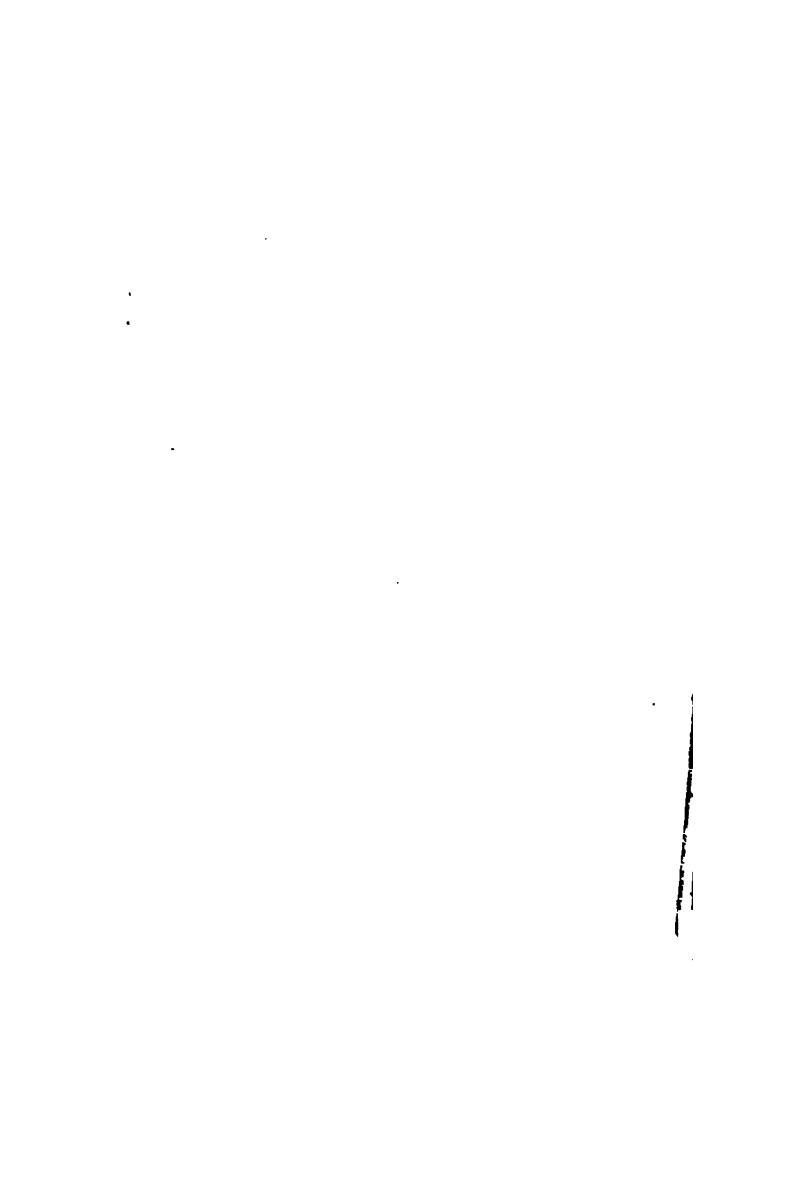
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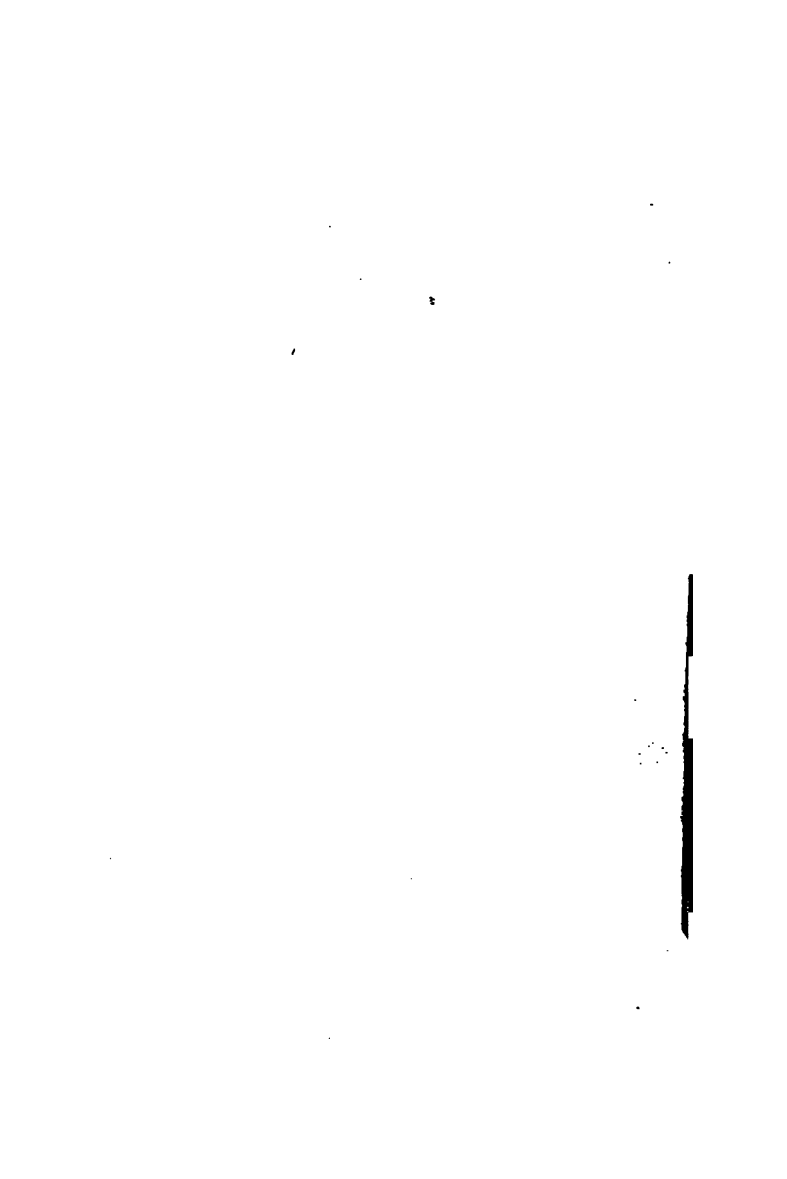
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A
POPULAR DESCRIPTION
OF THE
INDIGENOUS PLANTS
OF
LANARKSHIRE,
WITH
AN INTRODUCTION TO BOTANY,
AND
A GLOSSARY OF BOTANICAL TERMS.
BY THE
REV. WILLIAM PATRICK.



DANIEL LIZARS, EDINBURGH;
W. R. M'PHUN AND A. LOTTIMER, GLASGOW;
AND JAMES THOMSON, HAMILTON.

M.DCCC.XXX.I.

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" The spleen is seldom felt, where Flora reigns."

**J. THOMSON, PRINTER,
HAMILTON.**

TO THE
HONOURABLE CHARLES DOUGLAS,
MEMBER OF PARLIAMENT,
FOR THE COUNTY OF LANARK,
&c. &c. &c.

THIS VOLUME
IS RESPECTFULLY DEDICATED,

BY THE
AUTHOR.



PREFACE.

At a period when the study of Natural History is so generally and assiduously cultivated, the most lovely and fascinating of the three grand departments or kingdoms into which the various productions of nature are usually divided, namely, the vegetable kingdom, has not been without its host of admirers. It may be said without exaggeration, that the charms of Flora, are at the present moment felt and appreciated, by individuals of all ranks and of both sexes. Those advantages which, formerly, were almost exclusively vouchsafed to the few—to the naturalist, to the inhabitants of the country, to gentlemen of the Medical profession &c.—are now by means of botanic gardens, public institutions, and cheap and elementary publications on botany, rendered in some degree available to all; and thus, while the boundaries of human knowledge have been enlarged, and the sources of our rational enjoyments increased, *these* have been the means of instilling into the minds of thousands, more suitable ideas of the attributes of the Divine being, by exemplifying *them in the order and harmony of the visible creation: thus confirming the declaration of the poet—*

———“ was every faltering tongue of man,
ALMIGHTY FATHER, silent in thy praise,
Thy works themselves would raise a general voice,
Ev'n in the depths of *solitary woods*,
By human foot untrod ; proclaim thy power,
And to the choir celestial ~~THEE~~ resound,
Th' eternal Cause, Support, and End of all.”

In presenting a Flora of Lanarkshire to the public, it may be proper to state, that the present volume contains the Phanogamous or flowering plants only, i. e. those which are comprehended under the twenty-three first classes of the Linnean system ; and, which constitute a large proportion of the whole vegetable productions of the county. The Cryptogamous plants, namely, the ferns, mosses, lichens, mushrooms &c., are reserved for a second volume.

To those persons who have made little or no progress in the study of the science of botany, the following work will be particularly serviceable. For the sake of perspicuity, and that the memory may not be overburthened by a retention not fairly to be expected from ordinary readers, botanical terms, technical and abstruse phraseology, have been as much as possible avoided, and where that could not be conveniently accomplished, they have been carefully explained in a Glossary and Introduction. The English names of the plants, which in more scientific works are generally placed after the Linnean names, are here placed first, and the botanical names which so frequently perplex, dishearten, or disgust beginners, are only subjoined, so as to be acquired or omitted as may suit the taste or inclination of the reader. In

the descriptions of the *species*, an improvement or simplification has also been attempted, namely, in embodying the *specific* in the *general* descriptions, from which they are at the same time sufficiently distinguished by being printed in *italics*. By this method, the more obvious, as well as the less conspicuous though truly characteristic features of a plant, are at once brought under the eye of the inquirer, and thus the bewildering and often galling necessity of hurrying from one department of a work to another, from a synoptical table of generic or essential characters to the specific, and then from specific to general descriptions, is altogether superseded. The *habitats* or stations of plants, which ought to be a principal part of a local flora, have been carefully and minutely recorded. Of these, by far the greater portion are new; and of those which the Flora Glottiana and the Flora Scotica furnish within the bounds to which this work is restricted, few are inserted, which have not been previously visited—and thus confirmed or verified anew by personal inspection. In regard to the notices relative to the arts, manufactures, commerce &c., which are interwoven whenever articles of trade have been described, few of these are, of course, the result of the author's personal experience; but as they have been uniformly selected from the best and most approved sources and authorities, if authority can of *itself* be received by the reader as a pledge for accuracy or security, they may in general be relied on. It is a favourite maxim with some physicians, that where nature produces diseases, there she also furnishes the remedies for them. In proof of this dogma the following facts have been adduced, namely—"the growth of scurvy-grass, and other antiscorbutic plants in those cold climates where

scurvy reigns as an epidemic ; of pepper and other spices in hot countries, where the stomach is liable to torpor, and requires an extraordinary stimulus to promote its healthy action ; as also of calamus aromaticus in those humid situations which are liable to intermittent fevers ; and of sarsaparilla and guaiacum in the regions supposed to be the native seats of lues, and where, according to a Spanish traveller, d'Aranda, in his account of South America, it is a sporadic disease." Without absolutely professing to be the convert of a theory, which seems, however, to carry in it some appearance of truth, it has been thought advisable in a few instances to mention the medicinal virtues of plants ;—but as the author is no physician and knows little or nothing of their virtues or effects from experience, the reader would do well before applying them, to procure the additional sanction of medical authority.

From the Introduction which follows this Preface, it will be seen, that the Linnean arrangement is exclusively adopted. This, in deference to the advocates of a natural system, and to the critical *leaning* which is unequivocally manifested in several highly respectable scientific journals of the day—may require some explanation. At the present moment two systems of botany seem to be struggling for the ascendancy in this country, namely, the *artificial* arrangement of Linneus which has been long in repute, and the more recently adopted *natural* system of Jussieu. It does not become a botanist so inexperienced as the author, to pretend to decide on the relative merits of these respective systems ; but he may be permitted to state the reasons, why on the present occasion, he has adopted the arrangement of the one, in pre-

ference to that of the other. It has always appeared to the author, that, while the system of Jussieu is best adapted to those plants which the botanists of that school have termed the Acotyledonous and Monocotyledonous plants, or *plantæ cellulosaæ*, and *plantæ endogenæ*, i. e. the Cryptogamizæ of Linneus, and some other grass-like plants &c. ; that, the artificial arrangement of Linneus is *still* best adapted to the Dicotyledonous plants, or the *plantæ exogenæ* of the same school—which series includes the greater portion of the phænogamous or flowering plants. The system of Jussieu, in fact, in so far as it relates to the latter, is not *natural* ; it is in many respects, equally, if not more artificial, than the professedly artificial arrangement of Linneus. It is well known, “ that the phænogamous or exogynous series of plants, contains full two-thirds of the whole number of natural families ; but, that the arrangement of these families among themselves has not as yet been determined, and therefore the families of this series are arranged by De Candolle for the present, into four *artificial* subseries, resting upon the differences observable in their *petals* and *stamens*, until a NATURAL arrangement by their affinities shall be discovered.” Under these circumstances the author cannot, therefore, be wrong in adopting the words of Dr Hooker in the introduction to his late admirable work the “ British Flora,” where he says—“ the experience of nearly an hundred years has proved to every unprejudiced mind, that no system has appeared which can be compared to that of the immortal Swede, for the facility with which it enables any one, hitherto unpractised in botany, to arrive at a knowledge of the *Genus and Species* of a plant. The Linnæan method is, therefore here adopted.”

Before concluding the explanatory part of this Preface, it may be remarked, that, in the composition of this little work, it has been the endeavour of the author to profit by that observation of Addison, where he says "that the essence of many folio volumes may be compressed into a twopenny pamphlet." Under the influence of this salutary and at present popular truth, the author has diligently perused, and when expedient, freely borrowed many things from, the writings of others; and although, in the present instance, he is conscious that he has not attained, or even made any approximation to the maximum of condensation alluded to in the above maxim of the Spectator, yet he shall be sufficiently satisfied if he shall be found to have imitated its *spirit*, and to have produced at a cheap rate, and under a portable form, a work, which, while it comprises the Flora of a large and populous district, will also serve as a manual of botany, and as an introduction to the study of British plants.

But before entering upon "a description of the plants of Lanarkshire," it may be proper to prefix some account of the district in which they are found.

Lanarkshire is situated between $55^{\circ} 22'$ and $55^{\circ} 50'$ north Latitude, and between $3^{\circ} 15'$ and $4^{\circ} 19'$ west Longitude. From the most southern part of the parish of Crawford—a little to the south of the uppermost source of the Crook Burn—to the most northern point of the parish of Calder—a little to the north of Bughtlee—it measures about forty-nine miles in length; and from the most eastern part of the county—in the parish of Dolphington—to the most western point—in the parish of Avondale, namely, Blackside-end near Sorn—about *thirty-five miles in breadth*. It is situated nearly at a

mean distance between the German and Atlantic Oceans. In general aspect the county is variable. To the south and south-west it is almost uniformly mountainous; while north of Tinto, it is neither mountainous nor champaign, but consists of a succession of gentle swells and roundish heights, interspersed, of course, with intervening hollows, and a corresponding proportion of dells, ravines, and running streams. In one respect alone, this portion of the county presents the appearance of uniformity, namely, in the gradual rise of the ground on either side from the bed of the river Clyde.

But a more accurate notion—than any description can afford—may be formed of the general aspect and peculiar features of the district, from a slight survey of the nature and arrangement of its mineral strata. In a geological point of view, Lanarkshire may be divided into two grand portions or districts—the southern and the northern district. In each of these a certain description of rocks and mineral strata are found to predominate, and to produce a corresponding alteration of external character and surface. The upper or southern district comprehends the whole of that portion of Lanarkshire which lies to the south of Tinto; while the lower or northern district comprehends all that part of the county lying to the north of the above hill.

That portion of the county which lies to the south of Tinto, is about twenty-one miles in length; and the widest part—namely, from a hill near the source of Duneaton water on the borders of Ayrshire, to Culter Fell on the borders of Peebles—about twenty-three miles in breadth;—south of Lowther hill on the west, and Tweed-well on the east, it varies from six to eight miles

in breadth. This part of Lanarkshire, with few exceptions, is composed of—what geologists have termed—transition, lower secondary, or metalliferous rocks. These are supposed to be next in point of antiquity to the primary or granitic strata, which form the loftiest ridges of the globe. Of transition or lower secondary rocks there are various sorts, but those which chiefly prevail in this part of the country are, Clay-slate, Greywacke-slate, and common Greywacke. Clay-slate is the common roof-slate, so abundantly used for economical purposes. Greywacke is a term of German origin, and is applied to a sort of rock which is nearly allied to slate. Greywacke-slate is generally of a grey, darkish grey, or even of a reddish colour, and is usually rougher and much coarser in the grain than Clay-slate:—but the finer sorts can scarcely be distinguished from Clay-slate. Common Greywacke is a coarse slaty substance composed either of rounded fragments of quartz connected by a basis of Clay-slate, or of fragments of Clay-slate imbedded in an argillaceous paste—along with some other ingredients. Nine tenths of the parish of Crawford, and the greater portion of those parishes which lie beyond Tinto are composed of the above description of rocks. Of these the common Greywacke forms, in most instances, the primary or subordinate strata, and hills of a lesser elevation;—the other two, in general, rising above or resting upon it. The same range and description of rocks extend into the counties of Dumfries, Selkirk, and Berwick. These resting in their south western extremities on the primitive rocks of Galloway, are said (see *Edinburgh Journal of Natural and Geographical Science* No 12 page 404,) to belong to the same great formation of Clay-slate the

crosses the Western Pyrenees, the Alps of Switzerland between Hartz and Glaris, and the north of Germany from the Hartz as far as Belgium and Ardennea. It is the Clay-slate of Contentin, Brittany and Caucasus: It includes the schistose rocks of Norway, placed below the porphyries and green sienites. It is according to De Humboldt, the green Clay-slate of Malpasso, in the Cordillera of Venezuela, and the Clay-slate in the sienites of Guanaxuato, in Mexico. It is in rocks of the above description that impressions of organic remains first appear; and it is in them and in rocks of the primary or granitic class that the richest metallic ores are found. Hence the transition strata are also termed metalliferous rocks. The lead so abundantly extracted from the extensive mines at Leadhills and Wanlockhead occurs in a formation of Greywacke and Greywack-slate.—Transition rocks being composed of softer and less wearable materials than the primary or granitic strata are on that account less able to withstand what may be termed the “wear and tear,” of the atmosphere and weather. Hence it is that hills of slate are seldom so precipitous as those hills which are composed of granite. A transition country may in general be distinguished at a distance, by the round-backed shape of the hills, their smooth and unbroken outline, and the thick matting of verdure which often clothes them up to their summits. This description applies to the hilly range which stretches from the southwest of Lanarkshire, through the counties above mentioned.—The district which lies beyond Tinto is, as has already been observed, in general aspect, a decidedly hilly country; *especially towards the S. W. where Leadhills and the Lowthers rise to a great elevation. Leadhills is*

about 1564 feet above the level of the sea. It is generally allowed to be among the highest inhabited districts in Scotland. The Lowthers rise to the elevation of about 3000 feet. Mr Penant's description of Leadhills is well known. "Nothing" says he "can equal the gloomy appearance of the country around ; neither tree, nor shrub, nor verdure, nor picturesque rocks, appear to amuse the eye ; the spectator must plunge into the bowels of the earth for entertainment." This description is, perhaps, more rhetorical than correct. The scenery about Leadhills—if it deserves such a name—is certainly bleak and desolate in the extreme ; as might be anticipated in a region where the bowels of the earth are almost literally turned "inside out." But this applies chiefly to the enormous mounds of earth and to the wastes in the immediate vicinity of the mines. Many of the hills, glens, and passes or *paths* in the neighbourhood and in the surrounding district are strikingly picturesque and beautiful ; and in some of their leading features will scarcely yield to any other portion of hill scenery in Scotland.

The lower or northern district, which now falls to be described, greatly exceeds the former both in extent of surface, and in fertility of soil. The rock formations which chiefly abound in this division of the county belong to the Secondary or *flötz*, and Alluvial classes. The Secondary or *flötz* rocks are red sandstone with its usually accompanying beds of tuff, basalt, greenstone, amygdaloid, limestone, coal, and conglomerate. The alluvial rocks are rolled masses, gravel, sand, clay, loam, peat and calcareous tuffa. But by far the most *interesting feature* in the Geognosy of this district is the *coal formation*, with its various subordinate beds and

strata of coal, limestone, sandstone, basalt, tuff, greenstone &c. In general, the free-stone and coal formations, prevail with little interruption, from the lower parts of the county, on the northern verge, to the borders of the parish of Lanark, with the exception of a ridge of whin metals in the higher parts of the parishes of Shotts and Cambusnethan, and some dykes or veins running through the coal fields. On the west side of the Clyde the free-stone and coal are also extensive, but they are more intersected by whin rocks, than they are on the other side of the river. The coal formation runs along the west side of the Clyde, from below Glasgow, to about the foot of the Nethan; and extends through the parishes of Glassford, Stonehouse, and Lesmahagow, to the water of Douglas. But it is much interrupted by the whin metals, and by a species of indurated sandstone to be afterwards noticed. The seams of coal are numerous, and of various depths and thickness. There are seven of these seams workable over much of the coal district, and in some places a greater number of seams or strata are found that are too thin to be wrought to advantage. The free-stone strata over the coal, and between the different seams, are of various dimensions, from two inches to several feet in thickness. The coal seams, and the metals connected with the coal formation in this county, all decline, or dip towards the Clyde on both sides of the river. The Hamilton coal-field is remarkable for the numerous abrupt endings of the coal, without ever coming in contact with the alluvial cover. In this respect it is altogether an exception to any other known coal-field. It has, therefore, been supposed that it does not belong to the Independent Coal-formation, but is of a more recent date.

Grit, *Cas arenaria*, free or sandstone, is in great abundance in those parts of the county where coal is found. It may be seen cropping out along the banks of most of the burns and rivers, where it often forms high and precipitous rocks. It is also found lying above the seams of coal, and often composes a great part of the dykes or troubles which derange the regular strata. But among the many varieties of this useful mineral to be found in various parts of the district, the most remarkable, is an extensive range of sandstone of a brick colour, and so much indurated as to be as hard as whinstone. This range extends from about the middle of the parish of Avondale, runs eastward through Lesmahagow parish and that of Lanark &c., to the verges of the county on the south of the Pentland hills, into Lothian and Tweeddale. In many respects it agrees with the old red sandstone of Werner; but it is more likely to be analogous to those beds of red sandstone which form part of the regular coal strata of Clackmannanshire, Lancashire &c. It is found in beds, of various thickness, from three inches to several yards. In its natural layers it is so solid and compact as to resist the action both of air and water. It is over rocks of this species, of seventy feet in height, that the river Clyde has rushed since its creation, and with a force which shakes the surrounding land—yet it has made no impression on these ramparts of natural masonry.

The whin or trap rocks commence in the parishes of Kilbride and Carmunnock, run through the higher grounds in the parishes of Cambuslang, Blantyre, Hamilton and Glassford, pass through part of Stonehouse parish, abound much in that of Avondale, and still more in those of Lesmahagow and Douglas—and they form

the principal imbedded mineral in all the parishes of Lanarkshire situated south from Tinto. These rocks also abound on the east side of the Clyde, particularly in the parishes of Shotts and Cambusnethan. Part of them are basalt, as at St Mungo's Church, Cathkin, Glassford, Shotts &c., and still more of them of the brittle or inadhesive sorts, termed, rotten-whin, trap-tuff, and phonolites. These when long exposed to the atmosphere, crack and fall down into small pieces, and are reduced to clay or mud—and in some instances they are known to have been converted into productive soils.] Besides these, there are many smaller ranges—generally called dykes or troubles—of the same metals running in various directions through the coal-fields, interrupting the regular strata, by sinking them on one side, and elevating them on the other—sometimes many feet. The prevailing direction which these dykes affect is nearly north and south, but as has been remarked above, they run in various directions, and in many places of the county, especially in the north-west, the main dykes run east and west, and the smaller ones north and south. — The whin or basaltic rocks of Scotland, are known to form part of an extensive formation of whin and porphyry, which extends—in nearly the same parallel of longitude—to the north, through the Hebrides as far as Iceland; and to the south, through Ireland and Madeira as far as the Canary Islands on the coast of Africa. Both ends of this range are at present seats of active volcanoes—a circumstance which is thought to favour the opinions of those who attribute to these rocks, a volcanic or igneous origin.

Limestone is found in several parts of the county, but it chiefly prevails in the parish of Kilbride. The strata are found at various depths, from one to fifty feet. There

are several varieties, but the greyish coloured sort is by far the most abundant. In the parishes of Rutherglen and Cambuslang, there is a calcareous stratum, known in the neighbourhood, by the name of Cambuslang Marble. It may be seen cropping out on the banks of the burn a little above Cambuslang Church. The prevailing colour is a darkish grey, sometimes inclining to red, and waved with spots of white. These spots are found to be produced by a bivalve shell, which prevails every where throughout the stratum. The stratum itself lies on a bed of till above the main coal. Several elegant and massive mantle pieces made of this sort of marble may be seen in Hamilton Palace, and at Chatelherault.—All the varieties of Limestone throughout the district abound in extraneous fossils, such as shells, entrochi, madrepores &c., and many of them are capable of receiving a high polish little inferior to marble.—Limestone along with four other simple minerals, namely, Quartz, Felspar, Mica, and Hornblende, are allowed by Geologists to be the most abundant minerals in nature. It is of these, according to Dr Jameson, that the crust of the earth is almost entirely composed. All other simple minerals described in Systems of Mineralogy, occur in comparatively small quantities. Of the five simple minerals above enumerated, the most generally and widely distributed are Quartz and Felspar; Limestone is more abundant than Mica and Hornblende—these two latter are, therefore, the least frequent.

Of Alluvial formations — besides rolled masses — clay, sand, gravel, loam, and peat, are the most abundant. *These, either variously aggregated, or in simple unmixed beds or masses, form the various sorts of soil.* The reader

need not be told, that—except the weather—nothing is so variable as the soil. It varies much, not only in every parish, but often in every farm in the district. Clay is, however, the most common soil, in all the arable parts of the district, from near Glasgow to the parish of Lanark on the east, and to Douglas water on the west side of the river Clyde. But through that range, there are not only many small patches of sandy soil, on many farms, and on the Holms or Haughs of the Clyde and other streams, but there are tracts of that species of soil, in several parts of the district. Towards the foot of the parish of Old Monkland, especially about Tollcross, sandy soil generally prevails. On the sand hills in the neighbourhood of the above village; many plants are found, which would be searched for in vain in the clayey stiff soil by which they are surrounded. The greater part of the parish of Avondale, part of that of Glasford, and some part of the parish of Stonehouse, much of that of Douglas, by far the greatest part of those of Carmichael, Pittenain, Covington and Symington, all on the west side of the river, are sandy, gravelly, or of a light open soil. Much of the parish of Lanark, the greater part of that of Carstairs, part of Carnwath, and all the parishes of Lanarkshire south of Tinto, are also of the same description of soil. Much of both sorts of soil, namely, clay and sand, have been formed by culture and the application of manure, into what Agriculturists term Loam—which is not a distinct species of soil, but that of any quality which has been duly deepened and enriched.

Moss or peat (*Geanthrax*) prevails to a great extent in the County of Lanark, especially, on the western side of the Clyde Besides large patches or fields of deep moss

mixed with the arable land, in all the parishes from Kilbride southward, on the west side of the Clyde; there are in the higher parts of all these parishes, where they march with the County of Ayr, very extensive tracts of land, covered with *moss earth*, from a few inches to many feet in depth. Some of that is covered with a sward of green herbage, and is termed bent moss; but much of it is of considerable depth, yielding chiefly Heather—Calluna, and Erica—and Moss-fogs, such as Sphagnum, Bryums, Polytrichums, and other common heath plants. Moss also prevails on the higher parts of the ridge of land situated on the eastern side of the river, especially, in the parish of Shotts, upper parts of Cambusnethan, Carluke, and Carstairs, and still more in the parishes of Carnwath, and Dunsyre. Indeed, every where towards the muirs, a good deal of moss earth is mixed into the soil,—especially where clay prevails. Such a mixture, however, renders the soil too light, and much disposed to become loose and hove.

It has been stated, that, the southern or upper district comprehends all that portion of the county which lies to the south of Tinto, while the northern or lower district comprehends that part of it which lies to the north of the above hill. These constitute what may be termed—the *face* of the country. A brief outline of its general appearance has already been attempted. But besides the above districts, there is a narrow stripe or range of country stretching between the two, and forming a sort of belt or line of intersection which separates the one from the other. The most conspicuous, and characteristic *features of this intersecting space*, are Tinto, and several *other dome-shaped hills*, in the same range of country.

This is mentioned apart from the rest of the county, because *here* that species of whin which has been termed phonolites, chiefly prevails, and rises to its greatest elevation. The phonolitic range, taking Tinto as the centre, stretches eastward through Biggar and Dolphington, and along the Pentland hills; and westward by Hawkshaw hill to the borders of Ayrshire. Tinto and all the dome-shaped hills in this district are almost entirely composed of the above mineral.—Phonolite is a sort of whin which, according to Gmelin, is intermediate between those two classes of volcanic rocks, the basaltic and trachytic. It is composed chiefly of felspar and zeolite. In lower Latitudes, the Phonolitic districts are said to be extremely fertile, and particularly adapted to the culture of the vine. This, it is supposed, may arise from the rocks imparting to the soil a great quantity of Alkali during decomposition—it being known, that Phonolites are characterized by the abundance of potash and soda, as the basalts are by the great proportion of protoxide of iron and of magnesia, which they contain. In our colder climate, however, the phonolitic districts are not remarkable for their fertility:—in Lanarkshire, in particular, the soil above these rocks is in general meagre and unworkable, producing little except Ling, and some other plants equally worthless and unprofitable.

The waters of the district are limited to the Clyde with its feeders, and about fifteen small lakes, twelve of which lie at the northern end of the county. Besides the Dair and Powtrail, which unite a little above Glenocher, and form the stream which afterwards receives the name of the Clyde, *we have Evan and Culter water on the eastern side, with many smaller intermediate streams; and on the western side, Elvan, Glengonnar, and Duneaton*

waters—with a host of tributaries. All of these flow into the Clyde before it reaches Tinto. The Clyde takes a remarkable evolution towards the east in passing the hill of Tinto. It continues to pursue the same circuitous course till it reaches the spot where it is joined by the water of Douglas, after which it runs nearly in a straight line through the centre of the County—the banks rising gradually on either side. From the general outline, and the figure which the Clyde, with the collateral branches and other streams running into it, make upon the map, this county has been fancied to resemble very much the leaf of a tree, whereof Clyde is the stem; or when viewed from a neighbouring height—that portion in particular which lies north of Tinto—has been compared by Mr Aiton to an open book laid on a table, with the Clyde running in almost a straight course in the middle. To the north of Tinto the Clyde is augmented by the south and north Medwins, from the parishes of Dunsyre and Carnwath; the Mouse near Lanark; the east Calder which falls into the Clyde near Hamilton; and the west Calder which divides the parishes of Bothwell and Monland. These with a few small burns, convey to the river the waters from the eastern side of the Clyde. On the western side of the river—also to the north of Tinto the Douglas, Nethan, Avon, and south Calder, with a number of burns, are the principal tributaries.

The general features of this lower part of the district are too well known to require further description. The remarks on the altitudes, and climate, will conclude already too lengthy Preface.

Beginning at the lower or northern end of the County and proceeding southward, the principal elevation:

follows.—The bed of the river Clyde rises from the flow of the tide, which reaches Rutherglen Haughs, to about 80 feet at Hamilton. It is probably about 200 feet high at the bottom of Stonbyre fall, 250 feet at Lanark bridge, and 700 feet at Thankerton near Tinto. The site of Hamilton Palace, and lower part of the Town adjoining to it, are in nearly 100 feet of altitude. The Towns of Strathaven, Lesmahagow, and Douglas, are understood to be in nearly 450 feet of altitude. Those of Carlisle and Airdrie stand 500 feet, and upwards, above high water mark. Carnwath and Biggar are in nearly 600 feet of altitude. The arable lands in the district rise from 50 to upwards of 800 feet above the level of the sea—and hills on the western verges of the district, will be found at every height, from 500 to above 1500 feet of altitude. The following heights may be more conveniently thrown into the form of a table.

	Feet above the sea.
Dichmont near Cambuslang, . . .	700
Town of Lanark,	650
Westraw, highest hill,	1000
Quothquanlaw,	1500
Walston Mount.	1550
Dolphington Kirk,	680
Kirk of Shotts,	650

The respective heights, to which Tinto and the Low-
thers arise, have been already stated.

The *climate* varies according to the altitude and situa-
tion of the different parts of the County. The tempera-
ture is *in general higher*, for example, in the vale of the
Clyde, and in the *sheltered dells* near the foot of the waters

and ravines which skirt along the banks of the river, than it is on the higher and bleaker grounds on the east, such as Airdrie and Shotts, and the still loftier ridge on the west, including the hills and hilly country in the parishes of Kilbride, Avondale, Lesmahagow, and Douglas. A large portion of the arable land in the above parishes, being open and unsheltered by nature, or by art, the severity of the weather is more felt there, than it is even in higher altitudes, where the land is partially covered from the severity of the storm, by mountains and hills. Hence we find, that the crops are generally sooner ripe in the sheltered vales of the upper ward of the County, than they are in the lower altitudes of the middle and under wards. But as if providence in this, as in other matters, had meant to deal impartially with her children, she has portioned out to each place its peculiar advantages. The hills and heights on the western side of the county, being only from 20 to 30 miles distant from the western shores, and being higher than any hills between them and the sea, have not only their full proportion of the western rains, which are generally much protracted and often copious, but they also serve to break the clouds and increase the rain on the west of the district—especially in the deep vale of the Clyde. In summer, however, when the clouds are so lightly burdened with moisture, as to yield only mists or drizzling rains on the heights, the density of the atmosphere in the vale of the river, buoys up the clouds till, if not exhausted, they reach the high lands on the eastern side of Lanarkshire. In this way the crops *and herbage* on the high grounds, are supplied with moisture, while those on the banks of the river—although lower, and in most circumstances more favourably situ-

ated—are kept back and injured, by the want of that necessary ingredient of their food.

The above are some of the local circumstances and causes which influence the climate in this district. There are other agents, however, more general and more active in their effects. Among these we may mention the winds. It is evident that winds flowing from cold countries must produce cold, and from hot countries heat; and that whatever has a tendency to produce such winds, must be the cause of unusual cold or heat. In this district the wind generally speaking blows, with little interruption, for 8 or 9 months every year, from the west or south-west. The effects of this constant blast may be seen on the trees, their trunks being more densely covered with lichen on their western, than they are on their eastern sides. These vegetables grow so abundantly, especially on the windward side of trees, and on the western skirts of plantations, that the difference may readily be felt,—so as to enable a person in case of wandering, to recover his direction, even in the dark. The easterly winds generally begin to blow sometime in the month of March or April, continueing with more or less steadiness, till the month of June, or July, at which period, the westerly winds generally begin to regain their former ascendancy. About this period, a protracted struggle usually takes place between these contending winds in the higher regions of the atmosphere, which regions, being loaded with electrical vapours in consequence of the excessive exhalations produced by the heat of the season, a friction is produced, electricity is evolved,—and hence probably the thunder storms which usually prevail—especially in the month of July.

As there is only a small portion of waters, or of marshy lands in the district, the temperature would suffer little from the effects of exhalation, were it not for the vast bodies of moss earth, which not only lie in patches among the arable land, especially on the west side of the Clyde, but which also cover the heights on both sides of the county.—It is well known—1. That water always absorbs a portion of heat or *caloric* in assuming the state of vapour. Hence, as has been observed, the coldness of marshy countries, and the cold which we often experience during, and after heavy rains. Hence also we may expect a cold winter after a rainy summer, because the universal evaporation carries off the heat of the earth. It is also known—2. That vapours when condensed give out a quantity of heat or *caloric*; a country, therefore, may be heated by the condensation over it of vapour brought from a distance. Hence also the sultriness often felt before rain.—The application of these principles is obvious.—The above mosses readily taking in much moisture, when the sun shines and arid winds begin to blow, exhale also much vapour, which tends greatly to cool the atmosphere, by absorbing a considerable portion of *caloric* and keeping it in a latent state. Under different circumstances, these may also act, as we have seen above, in an opposite way, and by condensing the vapours and thus causing them to give out a quantity of heat, tend greatly to increase the temperature of the atmosphere—especially in winter.

Rain, at once the commonest and most mysterious of *all the phenomena* connected with the weather, prevails *here to a great extent*, throughout the greater part of the *year*. *It falls at all seasons, and at all times of the day,*

and night. In winter, however, we have *generally* a greater number of rainy days than in summer; but the quantity of rain is greater in summer than in winter. By far the greater portion of our rains are from a westerly direction; for which we are probably indebted to that inexhaustable source of fluidity—the Atlantic Ocean. Upon examining the tables, containing statements of the quantity of rain falling annually in Great Britain, we may see from rain-gauges kept, for several years, in different places, the average quantity of rain which falls at each. From these tables it appears, that the average quantity which falls at Glasgow, is about 31 inches—at Dalkeith 25—and at Dumfries 36 inches. Thus it would appear—that, Mid Lothian is less deluged with rain than Lanarkshire, and Lanarkshire less so than Dumfries.

The vegetable productions of the county, are fully described in the body of the work. It will, therefore, only be necessary at present, to mention their *numerical* amount. This constitutes what has been termed by botanists the “arithmetic of plants;” and is the key to that interesting branch of science—which is at present cultivated with great ardour and success—“the physical distribution of vegetables.” The reader need scarcely be reminded, that Lanarkshire is altogether an *inland* county, lying between $55^{\circ} 22'$ and $55^{\circ} 50'$ north Latitude, and between $3^{\circ} 15'$ and $4^{\circ} 19'$ west Longitude. That the relative as well as absolute amount of its vegetables may be seen at one glance, we shall here compare its flora with that of Britain and Scotland, and some other districts. The Cryptogamous plants are not included in the estimate.

The *British Flora* comprehends about 1500 species, of which 410 are monocotyledonous plants.—the rest are of

the dicotyledonous series. The *Flora Scotica* contains 254 monocotyledones—in all 1075 species. Mr Greville's *Flora Edinensis*—which includes the country to the distance of ten miles around Edinburgh—comprises 771 phænogamous plants, of which 182 are monocotyledones, and 589 dicotyledones. The *Botanists Guide through Northumberland and Durham*, by Mr Winch, comprises 1029 species—monocotyledones 248—dicotyledones 783. Thus it would appear, that those two counties contain, nearly, as many flowering plants as the whole of Scotland. The present volume comprehends only 604 species, of which, 146 belong to the monocotyledonous series of plants, and 458 to the dicotyledones. The deficiency of the *Lanarkshire Flora* is observable, chiefly, in marine and alpine plants. With these exceptions, the young botanist will find in the following work, a fair specimen of the indigenous flowering plants of Scotland.

CLASSES AND ORDERS.

CLASS		PAGE.
	I. MONANDRIA,	39
	ORDER I. Monogynia, (<i>See Al-</i>	
	<i>chemilla Arvensis,</i>	
	<i>Tetrand. Monog.</i>)	do.
CLASS	II. DIANDRIA,	40
	ORDER I. Monogynia,	do.
	II. Digynia,	48
CLASS	III. TRIANDRIA,	49
	ORDER I. Monogynia,	do.
	II. Digynia,	58
	III. Trigynia,	86
CLASS	IV. TETRANDRIA,	87
	ORDER I. Monogynia,	do.
	II. Digynia, (<i>See Cus-</i>	
	<i>cuta, Pent. Dig.</i>)	—
	III. Tetragynia,	98
CLASS	V. PENTANDRIA,	102
	ORDER I. Monogynia,	do.
	II. Digynia,	127
	III. Trigynia, (<i>See Stella-</i>	
	<i>ria Media, Decand.</i>)	148
	IV. Tetragynia,	150
	V. Pentagynia, (<i>See Sper-</i>	
	<i>gula, Decand.</i>)	151
	VI. Hexagynia,	152
	VII. Polygynia (<i>See Ran-</i>	

		<i>unculus Hederace-</i> <i>us, Polyand.)</i> . . .	—
CLASS	VI. HEXANDRIA,	. . . . .	153
	ORDER	I. Monogynia, (<i>See some</i> <i>Polygona Oct. Trig.</i>)	do.
		II. Trigynia, (<i>Rumex.</i>)	168
		III. Polygynia, . . .	173
CLASS	VIII. OCTANDRIA,	. . . . .	174
	ORDER	I. Monogynia, . . .	do.
		II. Digynia, (<i>See Poly-</i> <i>gona, Ord. Dig.</i> <i>and Chrysosplen-</i> <i>ium and Scleran-</i> <i>thus, Dec. Dig.</i> . . .	—
		III. Trigynia, . . .	183
		IV. Tetragynia, . . .	187
CLASS	X. DECANDRIA,	. . . . .	189
	ORDER	I. Monogynia, (<i>See Vac-</i> <i>cinium Myrtillus,</i> <i>Oct.</i>)	do.
		II. Digynia, . . .	190
		III. Trigynia, . . .	193
		IV. Pentagynia, (<i>See Si-</i> <i>lene Inflata, Ord.</i> <i>Trig.</i>)	200
CLASS	XI. DODECANDRIA,	. . . . .	207
	ORDER	I. Monogynia, . . .	do.
		II. Digynia, (<i>Agrimo-</i> <i>nia.</i>)	do.
		III. Trigynia, . . .	208
		(<i>Order Tetragynia,</i> <i>see Tormetilla</i> <i>Officinalis, Icos.</i> <i>Polyg.</i>)	—
		IV. Dodecagynia, . . .	210
CLASS	XII. ICOSANDRIA,	. . . . .	211
	ORDER	I. Monogynia, . . .	do.
		II. Digynia,	213
		(<i>The above order com-</i>	

CLASSES AND ORDERS.

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PAGE.

*prehends plants with
from 2—5 styles.*

	III. Polygynia, . . .	217
CLASS	XIII. POLYANDRIA, . . .	227
	ORDER I. Monogynia, . . .	do.
	II Trigynia, . . .	231
	III. Pentagynia, . . .	232
	IV. Polygynia, . . .	233
CLASS	XIV. DIDYNAMIA, . . .	242
	ORDER I. Gymnospermia, . .	243
	II. Angiospermia, . . .	253
CLASS	XV. TETRADYNAMIA, . . .	259
	ORDER I. Siliculosa, . . .	260
	II. Siliquosa, . . .	264
CLASS	XVI. MONODELPHIA, . . .	272
	ORDER I. Pentandria, (<i>Linum</i> , <i>Pent. Pentag.</i>) . . .	do.
	II. Decandria, (<i>Oxalis</i> <i>Decand. Pentag.</i>) . . .	273
	III. Polyandria, . . .	276
CLASS	XVII. DIADELPHIA, . . .	278
	ORDER I. Hexandria, . . .	do.
	II. Octandria, . . .	279
	III. Decandria, . . .	280
CLASS	XVIII. POLYADELPHIA, . . .	291
	ORDER I. Polyandria, . . .	do.
CLASS	XIX. SYNGENESIA, . . .	294
	ORDER I. Polygamia <i>Æqualis</i> , . . .	do.
	II. Polygamia <i>Superflua</i> , . . .	309
	III. Polygamia <i>Frustra-</i> <i>nea</i> , . . .	322
CLASS	XX. GYNANDRIA, . . .	323
	ORDER I. Monandria, . . .	324
CLASS	XXI. MONŒCIA, . . .	330
	ORDER I. Monandria, . . .	do.
	II. Triandria, . . .	331
	III. Tetrandria, . . .	345
	(<i>Order Pentandria</i> , <i>Fagus Sylvat. and</i>	

		PAGE.
	<i>Quercus</i> Ord. <i>Polyand.</i>	—
	IV. Polyandria, . . .	347
	V. Monodelphia, . . .	352
CLASS XXII.	DICÆCIA, . . .	353
ORDER	I. Dicandria, . . .	do.
	II. Triandria, . . .	359
	III. Tetrandria, . . .	360
	IV. Pentrandria, . . .	361
	V. Octandria, . . .	362
	VI. Enneandria, . . .	363
	(Order Decand, <i>Lych-</i> <i>nis Dioica</i> , Decand. <i>Pent.</i>)	
	VII. Monodelphia, . . .	do.
CLASS XXIII.	POLYGAMIA, . . .	365
ORDER	I. Monœcia, . . .	do.

Note., Many stations or *habitats* will be found in the following work, where no parish nor town is mentioned to direct the stranger where to search for them: *these*, are for the most part, in the neighbourhood of Hamilton.

ADDITIONS AND CORRECTIONS.

PAGE 44. To the stations mentioned for *V. Scutellata*, Species V. add "Bogs a few hundred yards south of Biggar."

Page 51. The following additional species ought to have been inserted, viz.

Species III. *Marsh Valerian*, *V. Dioica*. In marshy ground about Biggar. June. Root jointed, creeping, smelling like Shop Valerian. Stem 6—10 inches high, upright, grooved, smooth. Root leaves nearly ovate entire—stem ones pinnate, with a large terminal lobe. Flowers flesh or blush-coloured, in dense, forked, cymose panicles—mostly diœcious, i. e. with stamens or pistils only—the male flowers with an imperfect barren style—the female ones with barren stamens at the base of the tube—sometimes both organs are perfect. Not common in Lanarkshire.

Page 114. To the stations given for *C. Sepium*, Species II. add "Hedges about Blantyre."

Page 137. Insert line 21. "Species I. Common Cow-parsnip, *H. Sphondylium*."

Page 138. To the stations given for *L. Meum*. Species I. add "On Walston Glebe."

Page 193. Add the following additional species of *Saxifrage*.

Species III. *Purple Saxifrage*, *S. Oppositifolia*. At the bottom of Corra Linn. A beautiful plant, insinuating itself into the crevices of alpine rocks, throwing out trailing branches which are clothed with straggling tufts of leaves and rich purple flowers, in the months of May and June. Stems, long, trailing, either forming tufts or hanging down from the crevices of rocks, branched, leafy—flowering branchlets erect. Stem leaves ovate opposite, imbricated, the upper ones ciliated, retuse, often resembling those of wild Thyme—a pore at the extremity. Flowers purple, very beautiful, unspotted, inclining to blue as they begin to fade—(hence the trivial name *Cerulea* which it sometimes receives)—solitary, terminal, nearly sessile, large in proportion to the size of the plants. This species although not unfrequent in the Highlands, is rare in this part of Scotland.

Page 256. To the stations for *S. Vernalis*, Species III. add "Persielands in the parish of Biggar."

N. B. Several typographical errors will be found in some of the sheets which were first thrown off; but as they have been corrected in all the subsequent copies; and as they in no instance alter or obscure the sense, it has been thought unnecessary to add a 2d *Errata*.

INTRODUCTION.

BOTANY is the science of plants, or that branch of natural history which relates to vegetables. The term is derived from a Greek word, *botane*, an herb, or grass, which is from *botos*, of *bosko*, I feed, because vegetables are the natural food of most animals.

Botany had its origin in Greece; although it is probable that the study of plants had been previously cultivated in the great Hierarchical colleges of Egypt and Persia, —where they were early applied in the cure of the sick, or the hurt. In detailing the history of Botany, in its progress from the earliest period to the present time, it may be divided into the following eras, each of which is characterized, by certain progressive *advances made in the science.*

The principal botanists who flourished during the first or Grecian era, whose names deserve to be recorded, either on account of their discoveries, or of the influence which their writings had in establishing the science itself, were : Hippocrates the Coan, the venerable father of medicine, born about 450 years before Christ ; Cratevas his cotemporary, whose works are now lost ; Aristotle son of the Physician, Nichomachus by Festiada, born at Stagyra, and afterwards raised by his well merited reputation to be Tutor to Alexander the Great ; Theophrastus a native of Eresus in Lesbos, the disciple of Aristotle, and his successor in the Peripatetic chair of philosophy at Athens ; and Dioscorides a native of Cilicia, who was physician to Antony and Cleopatra, or lived as some suppose in the reign of Nero.

The second or Roman period, comprises the names of three philosophers only, to whom this science is at all indebted—for although Cato and Columella had previously written on husbandry, yet none of their works can be said to be botanical—viz. Pliny the elder, who commanded the Roman fleet in the bay of Naples, and who perished in the year of Christ 71 in an *attempt to explore an eruption of mount Vesuvius* ; Apuleius who lived in the second century, author of a production entitled the

"Golden Ass," one of the few works of amusement, or what is generally termed light reading, which has descended to us from the ancients; and Galen, the cotemporary of Apuleius, a physician and medical writer at Rome, whose works became so celebrated, as to reign in the schools of medicine, to the exclusion of almost every other author from the seventh to the fifteenth century. Orebasius, Aetius, Egineta, and others who succeeded Galen, were such servile copiers of him that they scarcely merit notice. With regard to the Grecian and Roman eras, it may be observed, that notwithstanding the great celebrity, splendid talents, and undoubted acquirements of the philosophers whose names they embrace, these eras, were nevertheless, but little favourable for the advancement of botanical knowledge. What was then considered to be the science of botany was in fact, the *Materia Medica*; as the application of herbs to the purposes of medicine is the leading feature of the works ascribed to them. The marked inferiority of ancient science, in general has been ascribed to the little importance that was attached to the knowledge of the material world by the philosophers of Greece and Rome, who thought human nature, *the active pursuits of men, and the science of public affairs, the only objects*

deserving attention. Rome in particular, long the favoured seat of valour, glory, and learning, did nothing useful to science. The high consideration that was always attached by the Republic to eloquence, and military talents, seduced the mind to those pursuits : and science offering no advantage, was necessarily neglected in the midst of conquests undertaken by ambition, and of internal commotions in which liberty expired and yielded to the despotism of the emperors. The division of the empire, the necessary consequence of its vast extent, brought on its fall, and the light of science extinguished by the Barbarians, was only again revived among the Arabians.

The third period of the history of botany commenced with this people. Inspired by the zeal of a new religion, they burst from their sandy deserts, and overrun the west of Asia, the north of Africa, and south of Europe. As soon as they had formed regular establishments, they began to attend to the sciences, and translated the most popular Greek authors. Among these Arab writers Serapio stands pre-eminent, although Rhazis, Avicena, Actuarius—who wrote in Greek—and Mesue, must not be forgotten ; *and it may also be mentioned to the honour of the Arabs, that it is to them we are indebted, if not for the invention, yet for*

the introduction of chemical medicines into practice, so that we may easily estimate the great improvements of which they were the introducers.

As the Greek language was but little understood in western Europe, till the conquest of Constantinople by the Turks drove the Greeks into Italy; and as this emigration was speedily followed by the invention of printing, the learned emigrants, who were obliged to exert themselves to maintain their former station, endeavoured to render the Greek authors fashionable in the west. Of the Greek naturalists, Dioscorides was the first printed, with a Latin translation by Barbarus a Venetian nobleman, who died at the early age of twenty nine. This work was brought out in 1478, and was followed in 1483 by an edition of Theophrastus, with a Latin translation by Theodore Gaza, a Greek emigrant, which is still esteemed the best. To the publication of these fathers of botany, succeeded a host of commentaries upon them, whose authors endeavoured to find the plants of Syria and Egypt in Germany, forgetful of the difference of climate; and thus, instead of elucidating the author, they merely mislead their followers. Even now after the labours of Rauwolf who travelled in *Syria, Babylon and Egypt* in the *sixteenth century*; of Tournefort, who trav-

elled also in Greece, Crete, &c. ; and of Sir James Edward Smith, in our own day ; it does not appear that of the 700 medical plants mentioned by Dioscorides, more than 400 can be said to be properly ascertained.

The history of the progress of Botany, from the time of the revival of literature in Europe, to the present day, has been, with much propriety divided into the following periods. I. From Cæsalpinus to Morrison, or from 1583 to 1669. II. From Morrison to Tournefort, or from 1669 to 1694. III. From Tournefort to Linneus or from 1694 to 1735. IV. From Linneus to Smith, or from 1735 to the present time. Andreas Cæsalpinus, a physician, was born at Arezzo in Tuscany. Before his time the mere aspect of plants, as they appeared to a common observer, or their uses, or some equally unscientific arrangement, had been followed. But on the appearance of his work *De Plantis*, in 1583, Cæsalpinus laid down the basis of a philosophical division of vegetables, according to their fruit and seed, which has since been corrected and extended, by Morrison, Ray, Hermann, Boerhaave, and Gautner. This system of Cæsalpinus, although the first scientific one, is still valuable and merits attention ; but as *the science* advanced, it was found that *many plants* could not be referred to any of

its divisions, a defect which was supplied by Morrison, who improved on his plan, by taking the flower as well as the fruit, and arranging the subject into eighteen classes. During this period many eminent Botanists appeared, who benefited the science by their descriptions, more than by any attempts at arrangement.

Joseph Piton De Tournefort was born in 1656. In the early part of his life, he showed great traits of genius, frequently stealing from school, as we are told, to study nature, which, in after years he followed up, by travelling through the continents of Europe and Asia, and was subsequently chosen Professor of Botany at Paris. The system of this celebrated naturalist is founded chiefly on the form, regularity, and number of the petals of the corolla. Although he has evinced great assiduity in distributing his classes, yet all systems founded on the corolla alone, must fail, because that part of the plant is subject to great variations, dependent, for the most part, on adventitious circumstances. His arrangement was followed by all the professors of Europe of his time, and is to this day quoted by some.

Charles Linneus was a native of Sweden, and the son of an obscure Clergyman in that country. His father was a great admirer of the vegetable productions of

nature, and adorned the environs of his rural mansion with the natural produce of the neighbouring fields. Young Linneus caught the enthusiasm, and early imbibed the same taste, with such warmth, that he was never able to bend his mind to any other pursuit. His father intended to bring him up to the church, but he showed such a dislike to theological studies, to which his nature was averse, that his relations, angry and disappointed at his want of application, by way of punishment, proposed to bind him apprentice to a shoe-maker. But an overruling Providence destined him to fill a more noble and distinguished walk in life. A physician named Rothman, observing him to be a lad of genius, compassionated his situation and relieved him from it, by taking him into his own family, and instructing him in the science of medicine. By accident he lent him Tournefort's Elements of Botany to read, which renewed his former taste for vegetable productions, and decided the cast of his future character.

From that time he devoted all his leisure to his favourite study, and by the lustre of his abilities, drew the attention of some of the most learned men in Europe. Botany was in an imperfect state when he undertook *to form a new system, which he so ably effected, that it has immortalized his name;*

and although it may probably receive improvement from some future naturalists, it is never likely to be superseded.

Since the appearance of the sexual system, the only one at all entering into competition with it, is the present celebrated natural arrangement of Jussieu, founded on the cotelydons or lobes of seeds. Linneus had pronounced the discovery of the natural arrangement of plants, as attempted by Ray, to be nearly hopeless. The French botanists it would appear, did not so easily despair; Adanson, Bernard Jussieu, his nephew Antony Jussieu, professor at Paris, Lamarke, and still more lately De Candole, the present professor at Geneva, have again attempted this task, and have certainly carried it to a degree of perfection which could scarcely have been anticipated.

At present the attention of botanists seems to be chiefly devoted to the investigation of the imperfect or Cryptogamous plants. The modern botanists who have distinguished themselves in this walk are; Micheli, who has written on the liver-worts and fungi; Persoon, Link, and Esenbeck, on the fungi; and Gaertner, on the fruit of plants. Sir James Edward Smith, late president of the Linnean Society, also holds a high rank *among modern botanists*. He very patriotically purchased the whole of the Herbarium

of Linneus, and has published many new facts from it, which will ever lay science under great obligations. Of living British authors, the following are at present distinguished: R. Brown a native of Montrose, author of the "Botany of Terra Australis;" R. A. Salisbury, author of "Paradisus Londonensis," and of the "generic characters in the English Botany, by Sir J. E. Smith, collated with those of Linneus;" Goodenough, author of the "British species of Carex;" Dillevyn, author of the "British Confervæ;" Turner, author of "Synopsis of British Fuci;" Dr Hooker, author of "British Jungermaniæ, Flora Londonensis, and Flora Scotica," and present professor at Glasgow; Greville, author of the "Flora Edinensis;" Hopkirk, author of "Flora Glottiana."

Having thus brought the history of botany to the present time, before proceeding to an explanation of the Linnean system, it has been thought expedient, first, to present the reader with a brief outline of the Physiology of plants.

A plant, like an animal, is a very compound organized living being, in which, various operations, both chemical and mechanical, are continually carrying on, from *its first production* to its final dissolution. *It springs from a seed fertilized by the pollen*

of its parent plant. It takes in foreign substances by its inhaling and absorbent vessels. It extracts from, and assimilates to its own substance, those parts of them that are nutritious, and throws off the rest. It secretes a variety of fluids by means of the glands, and other unknown organs. It gives that motion to the sap, upon which the continuance of its life depends.

Of the theory of the vegetation, growth, propagation, or nutriment of vegetables, our knowledge is very slight and superficial. On making a transverse section of a tree, *i. e.* on cutting it through horizontally, it appears to consist of three parts, the bark, the wood and the pith. The *bark* comprehends four very distinct layers or parts—the cuticle, epidermis, or outer scarf-skin—the cutis, inner or thick skin—the *cellular integument* or covering—and the inner bark or *liber*. The *epidermis*, or vegetable cuticle, is an extremely thin membrane or pelicle, which, variously modified, extends over the surface of every part of the plant, from the spongy fibril of the root to the delicate petal of the flower, and even to the fruit; interposing a barrier between the living organs and all extraneous substances. It is commonly transparent and smooth; *sometimes it is hairy and downy; and sometimes of so hard a nature that even flint has*

been detected in its composition. This exterior scarfy substance may be seen to great advantage, in the birch and black currant bush. The *cutis* consists of two layers, the outer of which is the pelicle or epidermis already described, and the inner a composition of transverse cells which stretch betwixt the epidermis and the cellular integument. In young succulent shoots, the cutis is generally colourless and semi-transparent, transmitting the green colour of the cellular integument which it covers; but in some instances it is coloured; for example, white in the birch, and dark or wine coloured in the black currant bush—under the cutis, is found the *cellular integument*, which is analogous to the *rete mucosum* of animals; it is, like that, of a pulpy texture, and is the seat of colour. It is commonly green in the leaves and stems, and is dependent for its hue on the action of light. The *liber* or inner bark, is of a whitish hue, and the texture fibrous to the naked eye. It contains two kinds of organs—the vessels peculiar to the plants, and the longitudinal fibres or perpendicular threads. On removing the *bark*, the wood appears. It is fibrous in its texture, and is composed of layers or zones. During the growth of the plant a new zone is formed annually; and as in different seasons, the vegetation is

more or less vigorous, these zones vary in density and size, their number in general indicating the age of the tree. Through these are distributed a number of vessels, both straight and spiral, running in a perpendicular direction, and others which run horizontally from the bark. In the centre of the tree is the *pith* or *medulla*, which is of a similar structure in all vegetables; and is very plentiful in young plants, but, as they ripen, dries up, and appears in smaller quantities, and in aged trees altogether disappears. Between the wood and the pith lies a green-coloured substance, called the *corona*, or *crown*, which is said to contain all the parts of young plants in embryo. In herbaceous plants these parts are not so distinct as in trees and shrubs; the wood is wanting, and the stem is composed of a kind of cellular membrane, covered with an epidermis more or less thin, and inclosing the pith.

These are the solid parts of plants, which likewise contain fluids or juices of two kinds: 1st The *succus communis*, or common sap, is of the same nature in all vegetables, and differs little from common water, except that it sooner becomes putrid on exposure to the air. It is supposed to *ascend from the root*, and to abound in *proportion to the humidity of the soil*. 2nd

The *succus proprius*, or peculiar sap, which varies according to the different plants in which it exists, giving to each its sensible qualities. It appears from experiments, to proceed from the branches towards the roots, and never in a contrary direction.—Capillary attraction is thought to be the cause of the motion of these juices, the continuance of this power being supposed to depend on the evaporation from the leaves; and of late years a vital power assisting the flow of the juices has been ascribed to plants, because their return from the branches to the roots cannot be otherwise explained.

Such is a brief outline of the history of Botany, and of the physiology of plants. We now proceed to an EXPLANATION OF THE LINNEAN SYSTEM a competent Knowledge of which must be obtained, before the following work can be profitably perused.

The Linnean system of the classification of plants is formed upon a supposition that the stamens represent the male, and the pistils the female part of the fructification. The whole vegetable kingdom is distributed into 24 *classes*. These classes are divided into *orders*, which are subdivided into *genera* or *tribes*; and these genera are further divided into *species* or individuals. To illustrate this, no comparison can be more

in point than that which considers the vegetables upon the face of the globe as analogous to the inhabitants, thus: Vegetables resemble mankind in general; CLASSES, nations of men;—ORDERS, tribes or divisions of nations;—GENERA, the families that compose the tribes;—SPECIES, individuals of which families consist;—VARIETIES, individuals under different appearances.

Those parts of the plant from which the characters of the classes, orders, and genera are derived, are termed the FRUCTIFICATION. The fructification includes the flower and fruit, and contains the whole process of perfecting the seeds. It consists of seven parts. The *calyx*, or cup, an external covering of the flower. It is formed of one or more green or yellow leaves, situated at a small distance from or close to the blossom. Its chief use is to inclose and protect the other parts. The blossom, petals, or *corolla*, is that beautiful coloured part of a flower, which first draws the attention, and is regarded by common eyes as the flower itself; but botanists, more strict in their definitions, appropriate that term to the composition of the whole of the fructification, of which the corolla is only a part. The *stamens*, or *chives*, are slender *thread-like substances*, which are generally

placed within the blossom, and surround the pistils. These are denominated the male parts of a flower. The *pistil*, or *pointal*, is an organ in the centre of the flower, which adheres to the fruit, and is destined for the reception of the pollen. This is denominated the female part of the flower. The *seed-vessel*, or *pericarp*, is the germen grown to maturity; and is that organ of a plant which contains the seeds. The *seeds*, resemble the eggs of animals, and are the essence of the fruit, containing the rudiments of a new vegetable. The *base*, or *receptacle*, is that part by which the whole fructification is supported; in many flowers it is not very striking, but in others it is large and remarkable, as in the cotton thistle. The artichoke will also furnish us with an example; take away the empalement, blossoms, and bristly substances, and the part remaining is the receptacle, which we eat and call the bottom. Such are the seven principal parts of the fructification, which constitute—as has been observed—the basis, from which the characters of the classes, orders, and genera are derived. A little farther explanation may perhaps be requisite, to render the above descriptions *intelligible*. For this purpose procure a *specimen* of some plant which bears *single flowers*,—suppose, of the common potato,

the *solanum tuberosum* of botanists. Break off one of the flowers, and hold it by the little stalk between the thumb and finger. The green part nearest the hand, and close under the white or purple blossom, in form not unlike a cup, is termed the *calyx* or *flower-cup*. In this plant it is one-leaved, which leaf, is cut or cleft into five distinct parts, and hence, in the language of botany, is said to be five-cleft. The generally light purple part which grows out of the cup is the *corolla* or blossom. In some plants it consists of many leaves, termed *petals*, in the present instance it consists of only one leaf, which like the calyx is half five-cleft. Pull off very gently from the little stalk, the calyx and blossom, and six threads will be seen; one in the centre greener than the rest, springing from a roundish or elliptical body, and five others with large bright yellow heads, which will be found adhering to the corolla. Those with heads are called *stamens*, and are each composed of two parts, the heads called *anthers*, and the threads which support them *filaments*. The tall green centre thread is called the *pistil*, and consists of three parts; the *germen* or seed-bud, which is the roundish elliptical green part at the bottom, the *style* which stands upon it, and the *stigma* or summit, which in this plant is thicker and greener than the

style. When the blossom falls off, after the plant has been in flower for some time, the germen grows large, and is then called the *seed vessel*, or *pericarp*, (in the potato the *bullet*) because it contains the seeds within it. When the above parts are all removed, you may perceive what is called the *receptacle*; it is that part at the top of the stalk, to which all the rest of the flower is fixed. In this plant it is not conspicuous.

Some flowers possess all these parts, others are deficient in some of them; but the stamens or pistils, or both, are essential, and are to be found in all, either in flowers on the same plant, or in different individual flowers of the same species, on separate plants. Linneus accordingly takes the characters of his Classes and orders from these *essential* parts of the flower. The characters of the *classes* are taken almost exclusively from the *stamens*; those of the *orders*, in the thirteen first classes, from the number of the *pistils*; in the others, from circumstances to be hereafter explained. We now proceed to the explanation of these two primary divisions. Linneus disposed of all plants in twenty-four divisions, each of which is called a Class, and each class he divided into Orders. In each of the first twenty classes there are stamens and pistils in the twenty-first class they

are in distinct flowers on the same plant ; in the twenty-second, in distinct flowers on different plants ; in the twenty third, they are in the same flower, as well as in distinct ones ; and they are not at all to be seen in the twenty-fourth class. The names of the classes are formed from Greek words, and express the characteristics of each class. The first eleven classes are named from the Greek numerals and the word *andria*, which means the same as stamens. Should you gather a flower, in order to know to which class it belongs, observe first, whether it be a perfect flower, containing both stamens and pistils ; if that be the case, examine whether the stamens are entirely separate from the pistil and each other from top to bottom. If you find that they are perfectly distinct, and of equal height and maturity, and not so many as twenty, the number of them alone will be sufficient to determine the class. Those that have one stamen will belong to the first class *Monandria*. Those that have two, to the 2nd *Diandria*. Those that have three, to the 3rd *Triandria*. Those that have four, to the 4th *Tetrandria*. Those that have five, to the 5th *Pentandria*. Those that have six, to the 6th *Hexandria*. Those that have seven, to the 7th *Heptandria*. Those that have eight, to the 8th *Octandria*. Those that

have nine, to the 9th *Enneandria*. Those that have ten, to the 10th *Decandria*. Those that have from eleven to nineteen, if disunited, to the 11th *Dedecandria*. Those that have twenty or more—the precise number not being of consequence, attached to the *calyx*, belong to the 12th *Icosandria*.

Those that have many stamens, generally more than twenty *not* attached to the *calyx*, belong to the 13th *Polyandria*.

The two following classes are derived from the consideration of the unequal length of the stamens.

Those flowers which have two long and two short stamens, called the *superiority of two*, belong to the 14th class *Didynamia*.

Those that have four long and two short stamens, called the *superiority of four*, belong to the 15th class *Tetradynamia*.

The four following classes derive their character from the circumstance of the stamens being united.

Those flowers which have the filaments all united, forming a little tube round the pistil, called a *brotherhood*, belong to the 16th class *Monodelphia*. Those that have the filaments united at the bottom, generally in two sets, called *two brotherhoods*, belong to the 17th class *Diadelphia*.

Those that have their filaments united at the bottom into three or more little parcels

or bundles, called *many brotherhoods*, belong to the 18th class *Polyadelphia*.

Those that have the anthers or little tips or knobs united into a little tube, but the filaments separate, called *generating together*, belong to the 19th class *Syngenesia*.

In the 20th class, the stamens are joined to, or stand upon the pistils or female organs, hence called *wife and husband Gynandria*.

The 21st class contains those flowers in which the stamens and pistils grow in separate flowers, but on the same plant, hence its name *Monoecia i. e. in one house*. The 22nd class contains those plants in which the stamens and pistils grow in separate flowers, and on different plants, and are hence supposed to live in *separate houses, Dioecia*. The 23rd class—*Polygamia i. e. many marriages*—contains such vegetables as have three different sorts of flowers growing on the same plant, that is to say, some having pistils only, some stamens only, and some having both together.

Those that belong to the 24th class *Cryptogamia i. e. concealed marriages*—have flowers which are not visible to the naked eye.

Having—from a consideration of the *stamens or males as above*—decided the class to which a plant belongs, the next object

that the botanist has in view, is to ascertain the ORDER. This is to be accomplished in the thirteen first classes by ascertaining the number of the pistils or female organs, and by adding *gynia*, instead of the termination *andria*, to the Greek words signifying the numbers. *Monogynia* will therefore signify one wife, female, or style; *Digynia*, two; *Trigynia*, three; *Tetragynia*, four; *Pentagynia*, five; *Hexagynia*, six; *Decagynia*, ten; *Polygynia*, many. In those cases where the pistils have no apparent style, the stigmas are to be numbered, which generally adhere to the seed-vessel like small protuberances, as may be observed in the flowers of the poppy. The orders of the fourteenth class Didynamia, are taken from the situation of the seeds: *Gymnospermia*, comprehending such as have naked or uncovered seeds; and *Angiospermia*, consisting of those that have their seeds covered, or enclosed in a capsule. The fruit supplies us with marks for the subdivision of the next class Tetradynamia. It is divided into two orders called *siliculosa* and *siliquosa*. The plants of the first order have a silicle, or short, roundish seed-vessel or pericarp. Those of the second contain their seeds in a silique, or long, slender pod. In the sixteenth, seventeenth, and eighteenth classes, the orders are distinguished by the number

of the stamens. The chief difficulty, with regard to the orders, lies in the class SYNGENESIA. This class comprehends those flowers that are called compound, such as the daisy and dandelion. Now if you would examine these florets strictly, you will perceive that they have sometimes both stamens and pistils; but you will also discover that some have stamens only, whilst others are furnished with a pistil alone; and lastly, that there are florets without either the one or the other. Let us distinguish the first of these by the term perfect florets; the second, by that of stamiferous; the third we will call pistiliferous; and the fourth, neuter florets. These variations require exact attention, because on them, and on the form of the florets, Linneus has founded the four first orders of this class. In the first order called *Polygamia Æqualis* all the florets are furnished with both stamens and pistils. In the second order, *Polygamia Superflua*, all the florets of the disk, or centre of the flower, are perfect *i. e.* have stamens and pistils; those of the ray or circumference have only pistils; both of them produce seed. In the third order, *Polygamia Frustanea*, the florets of the disk or centre, are perfect and produce seed; those of the margin, neuter; only some few of the genera

having the rudiments of pistils in their outer florets. The situation is reversed in the fourth order, *Polygamia Necessaria*; for the florets in the disk, though apparently perfect, are not really so, having stamens only: those of the margin have pistils only. The fifth order, *Polygamia Segregata* comprehends such flowers as have united tubular anthers, the florets with a partial calyx, all included in one general calyx. The orders of the three following classes, Gynandria, Monoecia, and Dioecia, being founded upon the stamens and taking their names from the preceding classes, according to the number, union, or disunion of the stamens in the respective flowers, require no particular elucidation. In the twenty-third class, called *Polygamia*, there are three orders, also founded upon the stamens, and taking their names from the preceding classes: viz. *Monoecia, one habitation*; *Dioecia, two habitations*; and *Trioecia, three habitations*. The twenty-fourth class has five orders, *Ferns, Mosses, Liverworts, Sedges, and Mushrooms*.

It has been observed that a person who is in the pursuit of the Class and Order of any *unknown flower*, may be said to be upon a *BOTANICAL JOURNEY* and the plant being his *Directory*, if he can read the *botanical characters* impressed on it by the

hand of nature, he will certainly, following system, very soon arrive at his journey's end. The class and order once ascertained, another *step* will lead him to the *genus* or family, and after that the gradation is brief which leads to the *name* of the *species* or individual, which is the key to all that is known concerning it among authors. A Genus (which is the singular of the Latin word Genera) is formed of a number of plants, as a family is formed of a number of individuals ; and these plants all agree with each other in the structure of the flowers and fruit. A species includes such plants as agree in these particulars, but differ in others : as in the leaves, the stem, the root, or other parts besides the flower. In order to be qualified to determine a genus, the student ought to be familiar not only with the seven parts of the fructification already mentioned, but also with the modifications of their several parts, and subdivisions. The determination of a species requires a knowledge of the different terms made use of by Botanists in their descriptions of the roots, stems, and leaves,—especially of the *leaves*. To enter into a detailed description, or an enumeration only, of the several parts, would far exceed the limit assigned to this *introduction*, The following abstract, along with the *Glossary*, which will be found at

the end of the book, will however, furnish the beginner with a specimen of such terms as are most common: Those who wish for farther insight ought to procure Ratray's Botanical Chart, which may be purchased for a small sum, or some larger book on botany.

In investigating the genera, the most conspicuous characters are derived from the Calyx and the Corolla. When the calyx is formed of one piece, or leaf, it is said to be monophyllous, when of more than a single piece, diphyllous, or two-leaved; triphyllous, three-leaved, &c., or polyphyllous, many leaved, according to the number of distinct pieces of which it is composed. It has also received different names according to the circumstances with which it is attended. It is said to be *superior* when inserted above the germen or young seed-vessel, and to be *inferior* when inserted beneath it. When it has its station close to the other parts of the flower, as in the *primrose*, it is called a *perianth* or flower-cup. When stationed at some distance from the flower, as in the hemlock and carrot, it is called an *involucre*, or fence. When it consists of one or more thin, dry, semi-transparent leaves, called *valves*, as in grasses, it is termed a glume, or husk. In the hazel and willow, it consists of a composition of flowers and chaff,

on a long, slender, thread shaped receptacle, the whole somewhat resembling a cat's tail, in which case it constitutes a catkin or Ament. A spatha or sheath, is a kind of calyx that opens lengthwise, and puts forth a flower-stalk, or spadix, as in the snow-drop.

The COROLLA, or BLOSSOM, is the termination of the inner bark of a plant, continued to, and accompanying the fructification, generally in the form of coloured leaves. Its use is to serve as an inner work or defence for the parts which it incloses; as the calyx which is usually of stronger texture, does for an outer defence. Blossoms formed of one piece, are called Monopetalous, those of many pieces Polypetalous. When equal in the figure, magnitude, and proportion of its parts, a Corolla is said to be *regular*; when differing in the figure, magnitude, and proportion of its parts, it is said to be *irregular*. In form the Corolla may be, Campanulate *i. e.* shaped like a bell; Funnel-shaped, *i. e.* shaped like a filter or funnel; Rotate or wheel-shaped; Ringent, irregular, gaping with two lips, as in sage; Personate, as above, but with the palate closed; Papilionaceous *i. e.* butterfly-shaped, as in the common pea; Cruciform, or crossed, spreading with four equal petals, as in wall-flower. There belongs to the

corolla of some plants a part called the Nectary or honey-cup, the use of which is for the secretion of honey.

Several different sorts of Pericarps, or seed-vessels are enumerated by botanists. A Capsule is a dry, hollow, seed-vessel, which splits in some determinate manner into pieces or valves, as in the poppy. A Legume is a pod, as in the pea, in which the seeds are fastened to a suture or seam only. A Silique is a pod longer than broad, in which the seeds are fastened to both seams, as in wall-flower. A silicle, exactly resembles the former, only, it is in general broader than long. The seed-vessel in the apple and pear is called a Pome; in the strawberry, gooseberry, and blackberry, Bacca; in hazzel nut, Nux; in the fir, the cone or *top*, which is the seed-vessel, is termed a Strobilus. The above terms will furnish a specimen of the *language*, and *parts*, of a plant, used by botanists in describing a genus. To these it will only be necessary to add the Inflorescence, a term used to express the particular manner in which flowers are situated upon a plant.

The several kinds of INFLORESCENCE are thus distinguished. A Whirl or verticillus, in which the flowers surround the stem, as in mint. A Spike consists of *numerous* crowded flowers, ranged along an

upright common stalk, expanding progressively, as in wheat and barley. A Cluster, or raceme, is exemplified in a bunch of currants, in which case several berries are born, each on its own stalk. A Corymb, is a flat topped spike, as in wall-flower. An Umble consists of several stalks called rays, spreading like an umbrella, as in carrot and hemlock. A Panicle is a loose, subdivided bunch of flowers, as in the oat.

It has been observed that the parts of a plant chiefly used in designating a species, are the Root, the Stem, and the Leaves—especially the Leaves.

The Root consists of two parts, the *caudex*, and the *radicle*. The caudex or stump, is the body or knot of the root, from which the trunk and branches ascend, and the fibrous roots descend. The Radicle is the fibrous part of the root, branching from the caudex. Roots are of the following kinds. Fibrous, consisting of fibres, or little thread-like substances only, as in many grasses and herbaceous plants. Creeping, or having a subterraneous stem, spreading horizontally in the ground, and throwing out numerous fibres, as in mint. Spindle-shaped, as in the raddish and carrot, which produce numerous fibres for the absorption of nutriment. Premorse or apparently bitten off, as in the primrose. Bulbous, round and fleshy, hav-

ing fibres only at the bottom, as in the turnip, lily, and onion. Tuberous, roundish, and fleshy, having fibres and *eyes* on the sides and top, as in the potato and peony. In their duration, roots are: Annual, perishing within the year; Bienniel, lasting two years; Fruticose, lasting three years; Perenniel, lasting many years.

The Trunks of trees include the **STEMS**, or **STALKS**, which are of several kinds. The stem as it advances in growth, is either able to support itself, or twines round other bodies. It is either *simple*, as in the lily; or branched, as in other plants. The different kinds of stems are: *Caulis*, a stem which bears both leaves and flowers, as the trunks and branches of all trees and shrubs, as well as of many herbaceous plants. *Culmus*, the peculiar stem of grasses, rushes, and similar plants. *Scapus*, a stalk, springs immediately from the root, bearing flowers and fruit, but not leaves, as in the primrose or cowslip. *Pedunculus*, the flower stalk, springs from the stem, or branches, bearing flowers and fruit, but not leaves. *Petiolus*, the foot stalk, is applied exclusively to the stalk of a leaf.

The **LEAVES** are organs which answer *the office of lungs*, by expiring and inspiring *air and water*. For this purpose their *surface is full of minute pores or holes*. They

are simple, compound, or determinate. Simple leaves are such as have only a single leaf on the petiole or leaf-stalk. They are extremely various in shape and appearance. Leaves having a greater length than width, being rounded at the base, and narrowed at the summit, resembling in shape the longitudinal section of an egg, are said to be *Ovate* or *egg-shaped*. When partaking of the same form, but having the narrow end downwards, they are said to be *Obovate*. A *Lanceolate* leaf gradually diminishes from the base to the summit, representing the head of a lance. In a *Linear* leaf the two edges are straight and equidistant throughout, except at the two extremities. A *Subulate* leaf is linear at bottom, but gradually lessening towards the top, and ending acute. *Setaceous* leaves are small like a bristle. *Spatulate* or *spatula-shaped* leaves, have the upper part round; and the lower narrow and linear. A *Linear-lanceolate* leaf is between both terms, but more linear than lanceolate. Leaves have often been named from their supposed resemblance to certain objects, as the above examples will show; the following will be sufficiently indicated by their names. *Cordate* or heart-shaped, resembling a heart on common playing cards. *Sagittate* or arrow-shaped, resembling the head of an arrow. *Hastate* or

spear-shaped, resembling the head of a spear. Panduriform, or fiddle-shaped, resembling the common violin. Palmated leaves imitate the fingers with the hand open.

The *borders* of leaves may be entire, having neither angles nor sinuses. Crenate, having round teeth, without any particular direction. Serrated, cut into sharp teeth like a saw. Ciliate, bordered all round with silky hairs. Erode, having the appearance of being gnawed or eaten by insects. Lacerated, having the margin cut into irregular segments, as if it were rent or torn.

In regard to their *summits* or *terminations*, leaves are: Acute, ending in a point. Acuminate, terminated by a point lengthened out. Obtuse, ending blunt. Tendrilled, terminating in a tendril.

The *surfaces* of leaves are often of great service, in describing a species. A leaf may be; smooth, without hairs, glands, or any peculiar excrescences. Pubescent, having soft hairs like down on it. Tomentose, having a cottony appearance. Silky, having the appearance of silk or satin. Hirsute, as if defended with bristles. Acculeate, armed with prickles.

COMPOUND LEAVES are such as have more than one leaf upon a petiole or leaf-stalk. A compound leaf, is said to be

Binate, when growing in pairs; **Ternate**, when growing in threes; and **Pinnate** or **winged**, when several leaflets proceed from the opposite sides of one footstalk, as in the ash tree, and rose.

By the Determination of leaves is to be understood their character expressed from some circumstance foreign to their own particular structure or shape; as from their situation, insertion, or direction. Leaves are : **Radical**, such as spring from the root. **Ramose**, those which grow on the branches. **Cauline**, such as grow on the stem. **Petio-late**, or growing on the foot-stalk. **Sessile**, or sitting, when the leaf grows immediately on the stem, branch or root, without any, foot stalk. **Decurrent**, or running downward, when the base of a sessile leaf extends downwards, along the stem. **Amplexicaul**, or embracing the stem, when the base of a leaf, embraces the stem sideways. **Perfoliate**, when the foot-stalk perforates, or passes through the substance of the leaf. **Verticillate**, or whorled, when the stalk is surrounded by leaves like the spokes of a wheel, as in woodruff.

Besides leaves, there are also certain parts of plants, the chief use of which is to strengthen and support them. These are termed **Supports**, **Props**, or **Fulcra**. The chief terms used in describing these,

when they occur, will be found in the glossary.

From the above outline of the Linnean system, the reader will be enabled to form a general idea of the classes, orders, genera, and species; and also of the method of investigating them. Those who wish to proceed farther in the study of this most interesting science, ought to peruse "Sir J. E. Smith's Introduction"—or if that work should prove too large or costly—"Bingly's Practical Introduction," or a very excellent book, entitled "Conversations on Botany;" after which, they may proceed to collect and describe plants for themselves, according to the plan adopted by Linneus.

As the collecting, preparing, and drying of plants, is the best method for acquiring an accurate knowledge of them, and of their several parts, I shall conclude this introduction, by directing the young botanist how to form an Herbarium, or Hortus Siccus.

After having collected as good a specimen as possible of the plant, lay it flat, (disposing of it in the best manner, so that the flowers and leaves do not interfere with each other,) betwixt a sheet of white paper; put this on a quire of blotting paper, and *also a quire over it*, and then apply a *weight on the top*. Books answer this

purpose very well. The next day put dry blotting paper as before, first opening the sheet of paper, and making any alterations in the dispositions of the parts. Dried specimens are to be fixed in slips of paper, or glued with common glue. These should be kept in shelves or drawers. To prevent the depredations of insects, Dr Smith recommends a solution of corrosive sublimate, (muriate of mercury) in spirits of wine, with which the plants, when dry, are to be gently moistened.



INDIGENOUS PLANTS

OF

LANARKSHIRE.



CLASS I.

CLASS 1st. ORDER 1st. MONANDRIA MONOGYNIA I. E. ONE STAMEN, AND ONE PISTIL, IN EACH FLOWER.

GENUS I. MARESTAIL, *Hippuris*. This family of plants has no blossom. The calyx is obsolete, or a two lobed rim crowning the germen. Its single stamen grows upon the receptacle, terminated by an anther slightly cloven, behind which will be found the pistil, with its awl-shaped stigma, tapering to a point. Fruit a nut, with one roundish, naked, seed.

Species I. *Common Mares Tail*, H. Vulgaris. In a bog beyond Possil, N. of Glasgow. In Walston bog near Biggar. A rare plant growing in ditches, marshes, and slow streams, and flowering in May and June. The root perennial, creeping, white, jointed. Stems numerous, 12 or 18 inches high, smooth, jointed, spongy. Leaves whorled, linear, about 8 at a joint. Flowers, without flower stalks, inconspicuous, one at the base of each leaf in the whorls above the

water. In some countries this is a troublesome weed in rivers, and chokes up the ditches; but like other aquatics, by absorbing a great quantity of inflammable gas, it is reputed to assist in purifying the putrid air of marshes.

CLASS II.

CLASS 2ND. ORDER 1ST. COMPREHEND ALL THOSE PLANTS, WHICH HAVE TWO STAMENS, AND ONE PISTIL, IN EACH FLOWER, HENCE THE NAMES OF THE CLASS AND ORDER, DIANDRIA MONOGYNIA.

GENUS I. PRIVET, *Ligustrum*, is distinguished from every other plant with two stamens and one pistil by its having a four-cleft corolla, and a four-seeded berry.

Species I. *Common Privet*, L. Vulgare. On the Avon at Haugh-head, on the Clyde at Dalziel Camp, perfectly wild,—and in hedges abundant. A shrub usually from four to six feet in height. Leaves *elliptic-lance-shaped* somewhat *acute* at the point. Flowers white, in a *compact panicle*, sweet scented. From the pulp of the berries a rose-coloured pigment may be prepared. With *the addition* of alum they dye wool and silk

of a good durable green. Its chief use is to form such hedges as are required in dividing gardens for shelter or ornament. A rare plant in many parts of Scotland. It flowers in June and July.

GENUS II. *Ash*, *Fraxinus*. Corolla absent, or 4-parted, Seed-vessel compressed, two seeded, some of the flowers with pistils only.

Species I. *Common Ash*, *F. Excelsior*. A large tree with *saw toothed* leaves. Flowers without *petals*. The timber of the ash is next in value to the oak, and in some places equal to it. It is hard and tough, and is much used by the coach-maker, wheelwright, and cartwright. The ashes of the wood afford excellent Pot-ash, and the bark is used for the tanning of nets, and of calf-skin. The seed-vessels—called ash keys, have been used in diseases of the liver.

GENUS III. ENCHANTER'S NIGHTSHADE, *Circæa*. In this genus, the calyx consists of two leaves which are bent backwards. The blossom consists also of two petals, which like the calyx are inserted above the germen. The seed-vessel has two cells, and the cells, one seed. A family of small sized, delicate looking, plants.

Species I. *Common Enchanter's Nightshade*, *C. Lutetiana*. In shady places, frequent. By the railway above Avon bridge. On the Clyde below Hamilton bridge. Gil-

burnsynk Kilbride, and in many other places. Root perennial, creeping. Stems often more than a foot in height, *upright*, (joints swelled, sometimes purplish) slightly branched. Leaves between the *egg* and *heart* shape, toothed, dark green, downy. Flowers in long branched Racemes, blossoms with two petals, white or pinkish. It flowers in June and July.

Species II. *Alpine Enchanter's Nightshade*, C. Alpina. In shady mountainous situations, rare. On the great burn Hamilton wood, and at Mauchlan-hole Kilbride. In this species, the stem is more *upright*, and branchy. The leaves are *heart shaped*, saw-toothed, pale shining and without down. The calyx is membranous. In other respects it strongly resembles the former. Mr Greville of Edinburgh, seems to think it only a variety.

GENUS IV. SPEEDWELL, *Veronica*. The monopetalous wheel-shaped corolla, divided into four segments, the lowest of which is *narrower* than the rest, and that opposite to it the broadest, as well as the heart-shaped, flatted seed-vessel with two cells, easily distinguish this genus, from every other, of the same class and order. The great number of species included under this genus, has induced botanists to treat it in the same manner as the orders, and to divide it into three principal divisions. The 1st Species

has bunches of flowers which are terminal, the 2nd 3rd 4th 5th and 6th have bunches of flowers springing from between the base of a leaf and the stem, and the 7th 8th and 9th Species, have solitary flowers, which are also axillary.

Species I. *Thyme-leaved Speedwell*, V. *Serpyllifolia*. Fields and pastures, abundant. Roots perennial, stems five or six inches long, prostrate, leaves opposite, *egg-shaped*, *slightly notched*, three-nerved, smooth. Flowers in a *spike*, small, pale blue, appearing in June and July.

Species II. *Shop Speedwell*, V. *Officinalis*. Woods, hedgebanks, and bare sandy places, common *e. g.* hedgebanks Meikle Earnock, Barncluith green &c. Root, perennial. Stems 3—9 inches long, hairy, *trailing*, branched, forming broad tufts, or scattered patches. Leaves broadly *egg-shaped*, opposite, closing as it were upwards, *rugged*. Flowers in erect spikes,—blossom pale purple, or faint violet, with deeper veins or streaks, appearing in June and July. Leaves much recommended, especially in Germany and Sweden, as a substitute for tea, than which they are more astringent and less grateful.

Species III. *Germander Speedwell*, V. *Chamædrys*. In May and June, every hedge, bank, and grassy bottom, is adorned, by the little brilliant blue blossoms, of this

truly elegant plant; *e. g.* Carriage way at Chatelherault. Root perennial. Stem, decumbent, about a foot high, with 2 *opposite rows of hairs*. Leaves, *egg-shaped*, without footstalks, *wrinkled*, cut, serrated. Flowers spiked, at length racemed, blossom bright blue. Leaves substituted for those of tea, more grateful than those of *Veronica Officinalis*.

Species IV. *Mountain Speedwell*, *V. Montana*. In moist woods, rare. Near the wooden bridge above Calderwood. By the walks at Blantyre Priory. Moist dell in Hamilton wood immediately above Barncluith, abundant. Woods at Cartlane. Root perennial. Stems 5—12 inches long, weak, ascending, *hairy all round*. Leaves *egg-shaped*, shining, on *foot-stalks*. saw-toothed. Racemes, springing from the side of the stem, alternate, loose, *thread-shaped*, few-flowered, blossoms pale blue, streaked with purple, appearing in May and June.

Species V. *Marsh Speedwell*, *V. Scutellata*. In marshes and bogs, not common. In a marshy place half a mile from Holytown on the Hamilton road, especially in the ditch running through the marsh, abundant. About the lochs on the borders of Old Monkland parish. A slender weak perennial herb, often of a purplish colour. Stems 6—12 inches long, erect. Leaves, *Linear*, *toothed* or nearly entire. Flowers in *alter-*

nate lateral bunches, flower stalks divaricate *i. e.* straddling,—blossoms pale flesh coloured, with purple veins, appearing in July and August.

Species VI. *Water Speedwell*, V. *Anagallis*. Ditches and watery places very rare. In a marshy place near Newhouse. Root perennial. Stems succulent, a foot or more in height, erect. Leaves *lance-shaped, saw-toothed*, acute. Racemes lateral, *opposite*, long, many flowered. Blossoms blueish or purplish, appearing from June to August. The flower stalks are not bent back as in the former species. Leaves eaten in salads as an antiscorbutic.

Species VII. *Brooklime*, V. *Beccabunga*. In clear ditches and limpid streams abundant; *e. g.* ditches at Riccarton, Deadwaters Ross, Laigh Motherwell, &c. Root perennial. Stems 1 foot long or upwards, *creeping*, round, succulent, smooth and shining, sending out long fibrous radicles from the joints. Leaves *elliptical, flat*, blunt, from one to two inches long, light green, shining, rather fleshy. Flowers in *opposite, lateral*, racemes or clusters, composed of numerous blue flowers, in perfection from June to August. Leaves eaten in salads as an antiscorbutic; generally gathered for medical purposes, and together with scurvy-grass, an ingredient in that nauseous com-

position called Spring juices. The leaves bruised and applied to green wounds, are said, soon to heal them. The *Wallink* of the village herbalist.

Species VIII. *Procumbent Speedwell*. V. *Agrestis*. Fields, waste places, neglected gardens, very common. Root annual, small, fibrous. Stems 3—9 inches long, round, hairy, *procumbent*, mostly unbranched. Leaves nearly without footstalks, between heart and egg-shaped, *shorter* than the flower stalk, broadly serrate. Flowers small, bright blue or whitish, on simple footstalks springing from the junction of the leaf with the stem. The segments of the calyx are between the egg and lance shape, and the seed-vessel consists of two turgid roundish lobes.

Species IX. *Wall Speedwell*, V. *Arvensis*. In dry fields, road sides, and on wall tops. Fields by Brandon road. Root annual. Stem from 3—6 inches high, *erect*. Leaves *egg-shaped*, pale green, deeply serrate, those nearest the flowers—called floral leaves, *lance-shaped*. Flowers, nearly without footstalks, solitary, small, pale blue. The segments of the calyx are lance-shaped, and the seed-vessels flattish and bordered with *fine hairs*.

Species X. *Hoyleaved Speedwell*, V. *Hederifolia*. Fields, and road sides, frequent.

Wall top at Castlehill. Fields at Blantyre. Root annual. Stems 6—12 inches long, weak, unbranched. Leaves between heart and egg-shaped, on footstalks, mostly with five lobes, the middle lobe the largest. Flowers pale blue, flowerstalks somewhat longer than the leaves, bent back when in fruit. The segments of the calyx are heart-shaped. This has the greatest resemblance to the *Agrestis*. There are at least 56 known species of *Veronica*.

GENUS V. BUTTERWORT, *Pinguicula*. The blossom of this family is of one petal, ringent, with a horn-shaped spur, arising from behind at the base of the petal. The calyx is five-eleft, with two lips, the upper lip is, erect, trifold, the inferior, reflexed, bifid. The seed-vessel has but one cell, which may be observed by cutting it through with a pen knife.

Species I. *Common Butterwort*, *P. Vulgaris*. A native of spongy bogs, and damp heaths. Moist field near Allington. Rawhead moor Kilbride &c. Root perennial. Like all the rest of this genus, this herb is destitute of a stem. Leaves all from the root, lying flat on the ground in a circular form, egg-shaped, blunt, fleshy, the edges rolled in, unctuous or greasy on the surface. Blossom with two lips, the upper lip with two lobes, the lower one in three unequal

obtuse segments, with a *sharp* pointed cylindrical spur beneath, as *long* as the veinless petal. The single, drooping, purple flower with a hairy palate, appears in June. The juice of this plant is used by the country people for curing chops in cows udders.

GENUS VI. DUCKWEED, *Lemna*. This genus has no blossom, the calyx is of one leaf, and the capsule many seeded. These plants are all annual, and float on stagnant water.

Species I. *Lesser Duckweed*. L. Minor. On ditches and stagnant waters abundant. Ditch near Newhouse, at Woodhouse Hamilton wood, and at Lady Well Motherwell, where it is frequently to be found in flower. Roots solitary. No Stem. Leaves *egg-shaped*, without footstalks, flattish on both sides, very small, collected into heaps by twos and threes, forming extensive green plats on stagnant waters, covering the ditches. This plant affords nourishment not only to ducks, but to the fresh water Polype, the Phalaena Lemnata &c.

ORDER II. Digyna, having two pistils in each flower, along with the single stamen.

GENUS VII. VERNAL GRASS, *Anthoxanthum*.

The Calyx is a husk or glume of two valves or pieces, containing one flower.

The 'corolla is also a two valved husk, the valves are acuminate.

Species I. *Sweet-scented Vernal-grass*. *A. Odoratum*. Common in pastures and woods. Brae park Silvertonhill. Woods at Jerviston abundant. Root perennial, odorous. Culm or stalk, upright, smooth, naked above, about a foot high. Spike of flowers *ovate-oblong*, interrupted, greenish, becoming yellow, wooly. The flowers are longer than their awns, and are *somewhat* peduncled. They are in full bloom about the end of May. The leaves on the stem are very short, with a long somewhat swelling sheath. This plant while drying smells like woodruff. It is said we are indebted to it for the delightful fragrance of the new mown hay. According to Beccone a distilled water is prepared from it, as the vehicle of some perfumes.

CLASS III.

THREE STAMENS WITH ONE PISTIL. TRI-ANDRIA MONOGYNIA.

With the exception of Valerian and Fedia the genera comprehended under this class and order are mostly grass-like plants.

GENUS I. VALERIAN, *Valeriana*. This Genus has scarcely any calyx. The corolla is one-petalled, swelling on one side at the base, border five-cleft, seed one crowned with down.

Species I. *Shop Valerian*, V. *Officinalis*. Banks of streams, moist woods, and waste places. On the Calder between Coursington bridge and Carfin. Hamilton wood in many places. Plantation at Hamilton bridge, especially near the gate on Motherwell road. Root perennial. Stems in dry ground one or two feet in height, in moist places and gardens three or four feet high, round, grooved, hollow. Leaves *all* pinnate, leaf-lets *lance-shaped*, saw-toothed, dull green, often tinged with pink. Flowers flesh coloured, or white, collected into broad dense, branched heads, or corymbose tufts, which appear in June and July. The roots are warm, bitterish, sub-acrid, strong-scented, antispasmodic in doses of one or two drachms; excellent in habitual costiveness; cats, and especially rats, are fond of them.

Species II. *Pyrenian Valerian*, V. *Pyrenaica*. Woods, rare. At Daldowie. On the Avon at the Wood Yett. On the Calder at Woodhall, abundant. Root perennial. The stalks rise three feet high, *are hollow*, channelled, and send out oppo-

site branches towards the top. The stem leaves are *heart-shaped*, serrated, on foot-stalks, large, the uppermost pinnate. Flowers rose-coloured, collected into a large branched corymb, appearing in July.

GENUS II. CORN SALAD, *Fedia*. Limb of the calyx very small, five toothed, not becoming feathery. Corolla nearly as in valerian. Fruit three celled, two of these are mostly abortive. Nearly allied to the former genus.

Species I. *Garden Corn-salad*. F. *Oli-toria*. Cornfields and hedge banks, common. Field at Covantburn bridge. Banks at Dalziel Camp. Hedge banks beyond Raith. Root annual. Stem 6—12 inches high, *forked*, spreading. Leaves opposite, the root ones spathula shaped, the others more or less reverse egg-shaped. Flowers in *tufts*, terminal pale blue, with an involucre beneath, of oblong bracteas. Fruit *three* toothed, ovato-rotundate, inflated, glabrous. In flower from May to July. Cultivated in gardens, *e. g.* at Bothwell Castle; young leaves eaten as salad in spring and autumn. The French call it *Salad de Pretre*, from its being generally eaten in Lent.

Species II. *Toothed Corn-salad*, F. *Dentata*. Corn fields. Field at Covant burn bridge. Root annual. Stem somewhat higher than the former, repeatedly *forked*, having a

flower in the *axils*, or between the forks. Leaves *linear, tongue-shaped*, blunt, more or less toothed at the base. Flowers flesh coloured, not in heads, but in *wide loose corymbs*, with fewer bracteas, which do not assume the form of an involucre. Fruit narrow, *egg-shaped*, glabrous, 5-ribbed, three-toothed, two of the teeth very short. June and July.

GENUS III. FLEUR-DE-LUCE, *Iris*. The blossom is six parted, and has the alternate petals bent back. The stigma is petaliform *i. e.* resembling a flower petal.

Species I. Water *Fleur-de-luce*, I. *Pseudacorus*. Ditches, marshes, and river sides common. Ditches at Merryton. Centre of a marshy field on Allington farm. Side of the Clyde below Dalziel camp. Roots large, fleshy horizontal, blackish on the outside, reddish and spongy within, perennial. Stem 4 feet high, *Compressed*. Leaves *sword-shaped*, those from the root, two or three feet long, upright, an inch or more in breadth,—those from the stem shorter, forming a sheath at the bottom. Blossoms yellow, spotted with deeper yellow, veined with black. The lobes of the perianth are beardless; inner erect, *smaller* than the stigma. July. Roots acrid when fresh, warm when dry, may be substituted for galangals;

juice of the roots purgative in doses of 80 drops every hour, but is very violent in its operation; also recommended by Brookes as a remedy for the toothache. M. Lovrat a French chemist, has discovered, that the seed, when dried by heat, and freed from the friable shell which envelopes it, produces a beverage similar to coffee, but much superior in taste and flavour.

GENUS IV. BOG-RUSH, *Schænus*. The glumes are chaffy, one-valved, clustered or heaped, the outter ones barren—corolla, none—seed, one, roundish, among the glumes.

Species I. *White headed Bog-rush*, *S. Albus*. In marshes and peat bogs, not common. Lochrig Shotts, and Glengivel Water Avondale. Culms or stalks *leafy*, 6—8 inches high, three-edged, very long, thread-shaped. Leaves, *bristle-shaped*, channelled. Flowers at the *summit* of the stalk, *clustered*,—2 or 3 stamens. Each head as Hooker observes—consists of three or four clusters of almost *white* flowers, collected into a sort of corymbus as long or longer than the involucre, by which it is at once distinguished.

GENUS V. CLUB-RUSH, *Scripus*. In this family the glumes, or husks, are tiled, or imbricated on every side—no blossom—seed, one, mostly beardless

Species I. *Turf Club-rush*, *S. Caespitosus*. Turfy heaths, very common. Drumloch. Root fibrous, tufted. Culms or stems, *round*, straited, *sheathed* at the base with numerous scales from 3 to 6 inches high. Spike of flowers, small, egg-shaped, at the *top* of the culm, reddish brown,—the outer glumes or husks are *largest*, and have the apex or summit *leaflike* or foliaceous. The fruit is elliptical and surrounded by about 6 bristles. This species is excessively common, frequently forming almost the entire turf of moist barren moors. It is sometimes the principal food of sheep and cattle in the Highlands.

Species II. *Marsh Club-rush*, *S. Palustris*. Sides of streams, and in Marshes, common. On the Clyde below Uddingston. On the Avon above Ross bridge. On the Calder below Coursington bridge. Culms or stalks, entirely without leaves, rounded, spongy, very soft, many from the same creeping root, 6—12 inches high—the sheaths at the base are *leafless*, entire, coloured, the lowest ones reddish and shorter. Spike of flowers almost oblong, brownish, many-flowered, neatly imbricated, the glumes being all nearly, equal in size. This species has two stigmas the former has three.

Species III. *Floating Club-rush*. *S. Fluitans*. In lochs and stagnant waters,

rare. Wrangham loch, near Holytown. Culm, weak, floating, flaccid, leafy 6—12 inches long. Leaves linear, short, floating, sheathing, and thus concealing the whole stem. Spikes of flowers, *solitary, terminal*, small, green or pale, 2—4 flowered. Husks greenish with a whitish margin. Stigmas 2. August.

Species IV. *Least Club-rush*, *S. Setaceus*. Moist gravelly places, not common. Clinkert-hill Rutherglen. Reservoir Shotts. Plants tufted. Culms, many, 2—5 inches high, rather stiff, *bristlelike*, slender unbranched. Leaves 1 or 2 with sheathing bases. Spikelets of flowers *two together*, terminal, apparently lateral, ovate, variegated with white green and purple. The involucre is one leaved, awlshaped, green, dilated at the base, and seems to be an actual elongation of the culm, giving to the flowers a lateral appearance.

Species V. *Wood Club-rush*. *S. Sylvaticus*. Water sides and damp woods. A scarce plant, but common about Hamilton. Woods at Bothwell. Clyde below Uddingston. Avon above Ross bridge. Lead at the camp bleachfield. Culm single, *three sided, leafy*, 2—3 feet high, hollow at the top. Leaves broad, acute, shining, ribbed, reaching beyond the stem. Cyme of flowers spreading, *repeatedly compound*; the divi-

sions various in their direction, and having at the base of each a lance-shaped leaf or bractea. Spikelets small, ovate, greenish, somewhat clustered. It flowers in July.

GENUS VI. COTTON GRASS, *Eriophorum*. This genus consists of bog plants. The glumes are chaffy and imbricated on every side. The seed is surrounded with very long white cotton or wool.

Species I. *Sheathed Cotton-grass*, *E. Vaginatum*. In bogs and cold barren situations. Bog between Boghead and Chapelton. Plant densely tufted. Culms or stalks erect, smooth, with 3 or 4 joints, roundish below, three-cornered *above*, *sheathed*, the uppermost sheath blunt and leafless. Root leaves sharp, pointed, streaked on two sides, convex on one side, flat on two sides. Stem leaves less sharp, upper one with a remarkable inflated sheath, purple at the base. It produces only *one* egg-shaped spike or head of flowers on each stalk, which in this, as in all the other species, is rendered remarkable when in fruit, from the abundance of the long silky hairs which spring from the base of the seeds, and makes the whole resemble a tuft of the finest white silk or cotton. April to June.

Species II. *Narrowleaved Cotton-grass*, *E. Angustifolium*. Turf bogs, common. *Moors* between Newhouse and Shotts, &c.

Distinguished from the above by having many heads of flowers. Plant tufted. Stem from 9 inches to a foot or more in height, *indistinctly* three-edged, upright, smooth, with two joints projecting a little, covered throughout its whole length with the sheaths of the leaves. Leaves *linear, channelled*, slender, *acutely keeled*, edge smooth. Spikes of flowers 3—5, egg-shaped, on *smooth* flowerstalks, which are never divided nor branched. This plant is larger than the former, the involucre longer, and the husks more acute. The root is perennial, *ereeping*. In May and June the mosses are often white all over with this most abundant species.

GENUS VII. MATGRASS OR BENT, *Nardus*. A Grass with only one style. It has no calyx. Blossom with two valves or chaffs.

Species I. *Common Bent*, N. *Stricta*. On moors and in barren pastures, frequent. Root perennial. Culms or stalks 3—9 inches high, wiry, smooth, twice the length at the time the seed is ripe, of what they are at the time of flowering. Leaves from the root, bristleshaped, rigid, closely tufted. Spike of flowers slender, erect, one rowed, all pointing *one way*; before flowering pressed close to the spike-stalk, which has small excavations to receive the florets,

afterwards spreading out. June. Owing to the extreme hard and wiry nature of the foliage, this grass is not relished by cattle.

ORDER II. TWO STYLES, Digynia. The Class and Order Triandria Digynia are quite natural, comprehending nearly all the grasses. However numerous or distinct from each other these may be, they generally agree in the following particulars, which form when taken together the *natural* characters of this tribe. The calyx is a glume or chaff, in most species, one larger, gibbous or bellied, the other smaller and flat. The corolla or blossom is also a two valved chaff, and is accompanied, by a small, superior, two leaved nectary of an oblong form, but it requires very good eyes, or a glass to discover it. The stamens are three in number, and have their slender capillary filaments or stalks, tipped with large, oblong, double anthers, easily perceptible, which play about freely on the slightest motion. There are two pistils, reflected or turned back, which have stigmas resembling little feathers. Their simple, straight, unbranched stalk, hollow and jointed, commonly called a straw, with long, narrow, tapering leaves, placed at each joint or knob of the stalk, and sheathing or enclosing it, together with the fibrous roots, something like a

bundle of strings, at once distinguish the grasses from all other plants.

SECTION I. Grasses which have only one flower in each calyx.

GENUS I. FOX-TAIL-GRASS, *Alopecurus*. The calyx has two valves or pieces,—one blossom,—and the blossom only one valve, which is simple at the tip, awned at the base.

Species I. *Meadow Foxtail-grass*, *A. Pratensis*. In meadows and pastures, very common. About Woodhall, abundant. Culms or straws from one to two or three feet high, *erect, smooth*, leafy. Leaves, broad long with smooth sheaths, and a short blunt ligule. Spike of flowers one or two inches long, *cylindrical blunt* at the point, yellowish-green, silky with silvery hairs arising from the chaffs of the calyx, which chaffs are united at the *base*. May to July. A most valuable grass in agriculture, being superior to most others in the three great requisites, quantity, quality, and earliness. It is perennial.

Species II. *Kneed Foxtail grass*, *A. Geniculatus*. Ponds and moist places, common. Ditch between Chatelherault and the deer Park. By the foot path between Hamilton and Bothwell bridge. Root perennial. Culm or straw from half a foot, to a foot or more long, floating, or prostrate on the damp soil,

bent or *kneed* at the joints, the uppermost one with a swollen sheath. Panicle of flowers spike-like, *cylindrical blunt*, somewhat woolly. Awn twice as long as the corolla, —the tip of the corolla minutely notched. June and July.

GENUS II. CATS-TAIL-GRASS, *Phleum*. The calyx has two valves, valves nearly equal, furnished with white straight hairs on the back and terminating with two dagger-like points. The corolla is included in the calyx—it has also two valves or pieces, but no awn.

Species I. *Meadow Catstail* or *Timothy Grass*, *P. Practense*. Meadows and pastures, common. About Raith. Root perennial. Culm or straw 1—3 feet high, leafy, a large portion naked above the uppermost leaf. Leaves flat, very acute, rough on the upper surface and along the nerve, sheathed, the sheath, smooth, streaked. Spike of flowers regularly *cylindrical*, and blunt at the top, often purplish; in young plants sometimes 4 or 5 inches long, in old plants much shorter. The calyx husks have two dagger points, are fringed at the back, and are longer than the awn—June and July. Much recommended about 30 years ago, under the quaint appellation of *Timothy Grass*, which it is said to have *acquired* from Mr Timothy Hanson, who

first brought the seeds of it from New York to Carolina.

GENUS II. CANARY GRASS, *Phalaris*. Calyx of two rather unequal valves, which are keeled, and contain a double corolla. The seeds—see canary seed—are covered by the corolla like a crust.

Species I. *Canary Grass*. *P. Canariensis*. Road sides, ruins, also cultivated. Sandy fields at Tollcross. By the rocks at Jerviston, below Coursington bridge. Root annual. Culms many, from a foot to eighteen inches in height, smooth, with brown joints. Leaves broad, flat, lance-shaped, soft, sheathed, white at the edges. Panicle of flowers, large, handsome, forming an *obtuse, egg-shaped spike*. The husks of the calyx are *boat-shaped*, streaked with green lines,—keel remarkably deep and acute—apex or tip quite *entire*. The blossom has 4 valves—outer smooth—inner with numerous soft hairs. June and July. Seed used as seed for singing birds. The cultivation of this grass is chiefly confined to the isle of Thanet, where it is esteemed a profitable crop.

Species II. *Reed Canary Grass*. *P. Arundinacea*. Bogs and river sides, common. Marshy places by the carriage way leading to Cadzow Castle. The variety *Arundo Colorata*—Gardiners Garters, grows abun-

dantly on an islet in the bottom of the burn above Whistleberry. Roots in tufts, creeping, jointed. Culms or straws from two to six feet in height, strong, knots smooth. Leaves very broad, flat, harsh, taper pointed, striated, with a long sheathing base and a very short stipule. Panicle of flowers *upright*, with *spreading* branches, branches rough, the florets facing one way, crowded, mostly tinged with pink or purple. The outer corolla consists of two very *minute hairy* valves. July and August. In a marshy place below Clyde bridge, this grass sometimes grows to the height of 8 and 9 feet.

GENUS IV. MILLET GRASS, *Milium*. Calyx 2 valved, one flowered, valves nearly equal, larger than the corolla, bellied. The stigmas are covered with numerous soft hairs.

Species I. *Loose Millet Grass*, *M. Effusum*. In Moist Woods. Common in Hamilton wood. On the banks of Cadzow burn, and Barncluith burn. Roots rather creeping, perennial. Straws generally rising to three or four feet in height, with about four joints, erect, smooth, leafy. Leaves broad, dark green, smooth, thin, and weak, with a roughish margin. Panicle of flowers from four inches to a foot in length, very *elegant, diffuse, lax*, delicate. Peduncles

naked below, far up becoming reflexed. Pedicles thickened. Husks of the calyx small, green, nearly smooth. It flowers in May.

GENUS V. BENT GRASS, *Agrostis*. Calyx one flowered, two valved, spear shaped, acute, generally rough on the keel; corolla two valved, shorter than the calyx, slightly hairy at the base—summits of the styles hairy—seed free.

Species I. *Brown Bent-grass*, *A. Canina*. Fields and heathy places, very common. By the Dukes railway. Earnock moor. Root perennial. Culms or straws one or two feet high, *prostrate, somewhat branched*. Leaves *linear*, narrow, rough on both sides. Panicle of flowers, erect, lax, the branches *are long, slender*, between erect and spreading. The husks of the calyx are somewhat unequal, lance-shaped, rough at the back, purplish. Valves of the corolla very unequal, (not single) the one very minute, the other striated with four nerves; from below the middle arises an awn about twice the length of the valve. June and July.

Species II. *Fine Bent-Grass*, *A. Vulgaris*. In meadows and pastures and on banks common. Orbiston. Fairhill &c. Root creeping. Culm 1 or 2 feet high. Leaves shortish, lower ones smooth, upper ones rough. Panicle of flowers purplish, the

rachis or stalk to which the flowers are immediately attached is smooth, the branches and branchlets roughish. Husks of calyx with a white margin, smooth, shining rough at the back. Valves of the corolla thin, delicate, unequal, the outer one with three nerves. The ligule *i. e.* the leaf-shrunk appendage inserted at the base of the leaf where it begins to clasp the stalk is extremely *short and truncated*. June and July.

Species III. *Marsh Bent-grass*, A. Alb. Stolonifera. Fields and road sides. Dried in Carmile wood. About Coltness and Cumbusnethan Manse. Plant stouter than the last and generally larger. Culms ascending, often rooting at the base and sending out runners. Panicle rather contracted pale green or purplish, branches *hispid* branchlets *spreading*. The outer valve of the corolla has *five nerves*, and as many teeth, the inner one is faintly 2 or 3 nerves at the base, nearly entire and obtuse at extremity. July. The famous florin grass of Dr Richardson and the Irish agriculturists. Cultivated by Sir J. Stewart at Coltness. See Dr Hookers remarks on plants, Flora Scotica page 26.

SECTION II. Grasses which have a calyx with two flowers.

GENUS VI. HAIR GRASS, *Aira*. Calyx

two valved, two flowered, without any rudiment of a third floret; corolla two valved, outer valved awned, the awn arising from the back, a little above the base—seldom awnless. Seed free.

Species I. *Crested Hair-grass*, A. Cristata. Mountainous pastures and rocky places. South Hall, avondale. Abundant at Jerviston. Perennial, tufted. Culms 6 to 8 inches high, round, straited, a little pubescent towards the top, erect from the lower joint upwards, under that decumbent. Leaves, linear, acute, flat, roughish at the margin and *ciliated*. Panicle *spiked*, cylindrical, but tapering on each side—spike stalk pubescent, but smooth towards the top. The awnless flowers are *longer* than the sharp pointed husks of the calyx. June and July.

Species II. *Turfy Hair-grass*, A. Cœpitoso. In meadows, fields and woods, abundant. Whitemoss Kilbride. Ditches by the road side between Hamilton and Holytown &c. Root fibrous, perennial. Culms from a foot and a half to three feet high, leafy, with a long naked space above the last leaf. Leaves long, linear, narrow, flat,—those from the root forming dense tufts, so sharp at the edges as to cut the finger when passed between them. Pannicle large *diffuse scabrous*, of a fine purple silky appearance.

Florets about the length of the calyx, abrupt, *hairy* at the base,—one of them on a hairy stalk; awn *short*, from the *bottom* of the valve. July and August.

Species III. *Zig-zag Hair-grass*, A. *Flexuosa*. Moors and barren pastures. Cathkin hills. Maxwelltoun Kilbride, Devonhill &c. Culm or straw, erect, 12—18 inches high, naked except at the base, mostly purplish, with one joint or knot near the bottom. Leaves *bristle-shaped* forming with the culms dense tufts, often covering moorish pasture to a great extent, Panicle *diffuse*, triple-forked, with wavy zig-zag branches,—before the time of flowering two flowered, rarely three. Blossom *wooly* at the base, about the length of the calyx; awn knee-bent, from the middle of the outer valve, longer than the calyx. July.

Species IV. *Silver Hair-grass*, A. *Caryophylla*. Gravelly hills and waste places. Scotstoun in the parish of Rutherglen. Cathkin hills. Karbent Avondale. Root perennial. Culms branched at bottom, leafy, 3—8 inches high. Leaves *bristle-shaped*, few, short, the root ones quickly withering; sheaths slightly straited. Panicle three forked, *divaricating*: florets silvery grey, *scarcely* wooly at the base, *shorter* than the calyx, awn inserted *below* the middle,

jointed, *longer* than the calyx. June and July.

Species V. *Early Hair-grass*, A. Præcox. Sandy hilly, pastures, wall tops. Pastures about Chatelherault. Wall top at the old oaks &c. Root annual. Culm erect, 3 inches high, very smooth, pale green. Leaves *bristle-shaped*, short, the stem ones with inflated, angular, smooth sheathes. Panicle or *spike*, few flowered, pale silvery green. Valves of the corolla, acute, with a bifid point, the awn arising from near the base, and *longer* than the calyx. May and June. This species has a sweet taste, and cattle are very fond of it.

GENUS VII. MELIC-GRASS, *Melica*. Calyx two valved, two flowered, with the rudiment of one or two florets, that are abortive and placed between the others; corolla two valved awnless. Seed covered by the hardened corolla.

Species I. *One-flowered Melic-grass* M. Uniflora. In woods In the woods Hamilton, Blantyre, and Bothwell. By a walk leading (down a glen) from Bothwell Castle to the cottage. On the Avon above Barncluith. Root perennial. Culm simple, a foot or more in height, very smooth, leafy, slender. Leaves flat, thin, light green. Panicle *branchy*, slightly drooping, *one sided*, *few flowered*. Spikelets *egg-shaped*,

erect, purple brown, long footstalked, with one perfect floret. June and July. The delicacy and striking colour of the panicle, joined to its place of growth in woods, readily distinguish this from all other grasses.

Species II. *Purple Melic-grass*, *M. Cœrulea*. On wet moors and heaths, frequent. On the moors in Avondale towards Muirkirk. Root perennial, thick, whitish, twisted. Culms from six inches to two feet high, numerous, rigid, glabrous, bulbous at the base, with one joint. Leaves linear, acuminate, roughish, channelled, all springing from the base, or from the single joint immediately above it. Panicle close, *erect*, compound, from 2—8 inches long, spikelets 3 seldom 4-flowering, of a green or purple, or of a green violet, and purple colour, varying. A pedicle knobbed at the end rises from betwixt the florets. Anthers of a beautiful purplish-blue colour, pistil purple. August. The fishermen in the isle of Sky make ropes for their nets of this grass.

GENUS VIII. SOFT GRASS, *Holcus*. Calyx two valved, two flowered, seldom three, awnless; corolla two valved, exterior valve awned, interior valve awnless, least—the flowers with pistils only, on footstalks, destitute of the inner husks. Seed free.

Species I. *Wooly Soft-grass*, H. Lanatus. Meadows, pastures, and woods, very common. Root fibrous, perennial, not creeping. Culms or straws from one to two feet high, leafy above, erect, downy with three or four joints. Leaves in dense tufts, broad, soft, downy on *both* sides. Panicle erect, about 3 inches long, lax, soft, generally of a reddish purple colour, tinged with green, or, when growing under the shade of trees, of a whitish green colour—branches erect before flowering, afterwards spreading. The calyx is *downy* or *wooly*—the lower floret with both stamens and pistils is *awnless*, the upper one with pistils only, has an arched *awn*, which is *hid* in the calyx. June and July. The velvet like softness of the whole plant and the redness of the opening panicle render this grass very conspicuous. Haller speaks highly of it as food for cattle, but it is not at all esteemed in this part of the country. This is, I believe, the Yorkshire fog of Agriculturists.

Species II. *Creeping Soft-grass*, H. Mol-
l's. In shady places and the roots of hedges, not uncommon. Sides of the woods at Jerviston &c. Roots perennial, *creeping*, long Stem 1—2 feet high, ascending (solitary, smooth, the knots pubescent.) Leaves linear-lanceolate, acute—narrower, softer, growing more distinct from each other, and

like the whole plant but slightly pubescent compared with the above species. Panicle erect, broad for its length—more scanty than in the *H. Lanatus*, and always of a pale whitish green colour. Calyx *parly* naked,—lower florets perfect, *awnless*, upper with a sharply bent awn which reaches *beyond* the calyx. July.

Species III. *Catlike Soft-grass*, *H. Avenaceous*. In bushy places, road sides, and corn fields abundant. Root composed of numerous *knots* or bulbs, like a string of beads, the smaller ones being uppermost. Culms erect from two to four feet high. Leaves dark green, flat, recurved, rather *harsh*. Panicle equally spread, rather contracted, drooping. Calyx *smooth*, the husks *unequal*,—barren floret *lowest*, with a sharply bent prominent *awn*, fertile one slightly *elevated*, *scarcely* awned. July. In the works of Linneus Curtis and Host, this grass is found under the name of *Avena Elatior*. It is cultivated in some places abroad.

SECTION III. Grasses with calyces which have many flowers.

GENUS IX. QUAKING-GRASS, *Briza*. Calyx two valved, many flowered; flowers collected into heart shaped spiklets; corolla two valved, exterior valve the shape and size of the calyx husks, inferior valve

smaller, flat, roundish. Seed depressed growing to the corolla.

Species I. *Common Quaking-grass*, B. Media. Woods, fields, and pastures. About Airdrie. Barncluith burn near the wooden bridge, and at the bottom of a rock near the hanging gate. About Jerviston. Root *fibrous*. Culm about 1 foot high, slender, erect, very smooth, naked above. Leaves erect, acute, flat, roughish. Panicle *much branched*, erect, *tremulous*, base naked; branches, slender, purple. Spikelets *egg-shaped*, about 7-flowered, greenish, three-angular. Calyx *shorter* than the flowers. From May to July. Easily discovered by the constant shaking of its spikelets. A beautiful grass.

GENUS X. MEADOW-GRASS, *Poa*. Calyx two valved, many flowered; corolla two valved, valves oval, though rather acute, awnless; covered by the corolla, furrowed; panicle more or less branching, or scattered—spikelets roundish at the base.

Species I. *Flote Meadow-grass*, P. Fluitans. Ditches, ponds, and sides of rivers, very common. Dead waters Ross &c. Root *creeping*, perennial, Culm ascending, lower joints rooting, 1—3 feet long, smooth, succulent, somewhat flaccid. Leaves flat, obtuse, broad, the lower ones floating,—the sheaths *long and smooth*, and the ligule

deltoid, short. Panicle forming a very long, lax spike, spreading out, facing *one* way. Spikelets, *linear*, round, *close pressed*, 8—12 flowered—florets obtuse, seven ribbed, with short *intermediate* ribs at the base. July and August. The *Manna seed* of the shops is the seed of this plant. The *Glyceria fluitans* of R. Brown.

Species II. *Flat-stalked Meadow-grass*, P. *Compressa*. Walls about the old oaks. Root perennial, creeping, consisting of downy fibres, thrown out from the lowest part of the stem. Culm one foot or more high, *ascending, compressed*, kneed or jointed at the very base, afterwards erect, leafy, naked above, striated. Leaves smooth, flat, short, acute, in some situations rather glaucous; sheaths smooth, long, two-edged, rather tumid. Panicle not much branched, squeezed *close*, directed *one* way,—during the time of flowering, the branchlets spread considerably, but immediately after the discharge of the Polen, they become again close pressed to the main branch. Spikelets between *oblong* and *egg-shaped*, of from 5—7 *blunt* florets which are angular, and united at their *base* by a delicate *webbed* substance. July and August.

Species III. *Roughish Meadow-grass*, P. *Trivialis*. Fields and pastures, abundant. *Banks at Auchingramont*. Root fibrous,

perennial. Culms *roughish*, rooting at the base, decumbent, weak, 1—2 feet high, leafy, frequently purple. Leaves erect, flat, flaccid, sharpish, keeled, rugged, especially underneath and round the edge; sheaths *rough*, pale green, the ligule *long* and *acute*. Panicle *spreading*, spikelets of *three* flowers, the outer glumes of which are 5-nerved, and webbed at the base. June and July. One of our best grasses, both for hay and pasture: without it, it is difficult to form a good meadow. It is a principal ingredient in that uncommonly productive meadow near Salisbury, mentioned by Stillingfleet, and described in the first volume of the Memoirs of the Bath agricultural society.

Species IV. *Smooth-stalked Meadow-grass*, P. Pratensis. Meadows and pastures, abundant. With the former. Root *creeping*, perennial. Culms *smooth*, erect, 1—2 feet high, simple, leafy, firmer than in the above species. Leaves obtuse, spreading, all flat, *smooth*, the upper much shorter than the sheath; sheaths *smooth*, ligule *i. e.* the membrane at the bottom of the leaf where the sheath begins, very *short* and *blunt*. Spikelets of about *four* flowers, with the outer glumes 5-nerved, webbed at the base. June and July. Dr Withering informs us, that *this grass constitutes a considerable*

part of the herbage in the various parts of Somersetshire.

Species V. *Annual Meadow-grass*, P. *Annua*. Fields, pastures and road sides, every where. Root *fibrous*, annual, remarkably full of fibres. Stalk ascending, from 6 to 9 inches long, leafy, smooth, *oblique*, slightly *compressed*, branching at the base, and rooting at the joints. Leaves two-rowed, spreading, flat, flaccid, blunt, sheathing,—sheaths light green, compressed,—ligule oblong, acute. Panicle erect, smooth, *one sided*, pale green. Spikelets between oblong and egg-shaped, of about five flowers which are a little remote, 5-ribbed, destitute of web, variegated with green and white, rarely reddish. The most common of our British grasses, occurring almost every where in meadows, pastures, gardens, by the sides of paths, and on walls; flowering all the summer, and even in the winter if the weather be mild.

Species VI. *Wood Meadow-grass*, P. *Nemoralis*. Woods and shady places, frequent. Root *slightly* creeping, tufted. Stalks weak slender, upright, a foot and a half high, slightly compressed, striated, *smooth*. Leaves slender, flat, *plaited* at bottom. Panicle long, slender, few flowered, drooping. Spikelets *lance-shaped*, two or three flowered, pale

green, not very numerous. The sheaths of the leaves are *smooth*. June and July.

Species VII. *Decumbent Meadow-grass*, P. Decumbens. Dry mountain pastures. West Quarry Rutherglen. Marsh beyond Possil. Root somewhat creeping. Culms decumbent, from ten to eighteen inches long—root leaves flat, hairy on the upper surface, especially at the base—stem leaves shorter,—sheaths villose towards the top, a little compressed, striated—the place of the sheath scale is supplied with a row of short hairs. Panicle very simple, little branches alternate; simple, shortest one 1 flowered, longest one 2 flowered; flowers from three to four, the terminating one always sterile. July.

GENUS XI. FESCUE-GRASS, *Festuca*. The calyx valves are opposite, unequal: the corolla two valved, valves lance-shaped, the exterior one acuminate, awned.

Species I. *Sheep's Fescue-grass*, F. Ovina. Abundant in dry elevated pastures. At Chatellherault. Root fibrous, in tufts, perennial. Stalk 4—8 inches high, four cornered *upwards*, almost naked, with two or three coloured joints. Leaves folded, *bristle-shaped*—those from the root upright, glaucous, *much tufted*—those on the stalk *few, short*; sheaths very long, ligule or sheath scale, very short, projecting on each

side. Panicle spreading, becoming contracted, directed to *one* side. Florets, with a purple tint, *cylindrical*, pointed or awned, smooth at the base and at the edges of the inner valve. June and July. A poor wiry grass.

Species II. *Hard Fescue-grass*, F. *Duriuscula*. Dry pastures, common. Green before Chatelherault. Twice or thrice the size of the preceding. Root fibrous, in tufts. Stalk round. Leaves bristle-like, sea green—those from the root many, hard, smoothish—those on the stalk *flat*, stiff, short; the sheaths are smooth, and the ligule short and brown. Panicle upright, spreading, facing one way, green and white. Spikelets with about *six* flowers with short awns—the former has only four or five. June. All these grasses form an admirable pasture for sheep. Curtis seems to prefer them for grass plots—the smoothness and beauty of those at Chatelherault are chiefly owing to these grasses.

Species III. *Meadow Fescue-grass*, F. *Pratensis*. Moist meadows and pastures, common. Root *fibrous*, perennial. Stalks many, one to two feet high, glabrous, leafy. Leaves spreading, linear, stalk ones rough on both sides—sheaths streaked, very smooth. Panicle nearly upright, branched, *spreading*, turned to one side; the branchlets

mostly simple, rough. Spikelets *linear*, compressed, not numerous—florets *numerous*, cylindrical, obscurely ribbed. June and July. Mr Curtis, who has cultivated this grass, recommends it among the six grasses, which he prefers before all others, and particularly for land either moist or moderately dry.

Species IV. *Tall Fescue-grass*, F. Elatior. Moist meadows and banks of streams. It greatly resembles the above species. Root *creeping*. perennial. Stalks erect, firm, leafy, 3 or 4 feet high. Leaves broader and longer than in the preceding species, *smooth*, the margin roughish. *Panicle* large, spreading, drooping a little; spikelets *many* flowered, *egg-lance-shaped*, acute, slightly flattened; florets cylindrical, scarcely ribbed. June and July. This grass is conspicuous by the breadth of its leaves, the height of its stems, and the drooping of its Panicle, at least before it flowers.

Species V. *Giant Fescue-grass*, F. Gigantea. Damp woods and hedges. Hedge between Rutherglen and Farme. Jerviston by the red walk. By the Duke's Railway &c. Root fibrous, perennial. Stalk 3—4 feet high, firm, smooth, glabrous, leafy. Leaves *nerved*, sword-shaped, firm, a foot and a half long, rough above and at the margin, somewhat shining beneath; apex

nodding,—sheaths long, straited, mostly tinged with a little purple at the base—ligule short, of a brown or russet colour. Panicle large, loose, drooping towards one side; spikelets *flattened*, egg-shaped or oblong, 3—6 flowered; husks of the calyx very unequal, acute, largest with 3 ribs—flowers *shorter* than the awn. July and August. This has the habit of a *Bromus*, but is placed by Smith among the *Festucæ* on account of the absence of the fringe to the inner valve of the blossom.

Species VI. *Spiked Fescue-grass*, *F. Lolifolia*. Moist pastures, rare. At Darngaber. Root *fibrous*, perennial. Stalk 1—2 feet high, smooth and leafy. Leaves flat. Spike two-rowed, long, rather drooping, the spikestalk angular, rough; spikelets nearly sessile, linear-oblong; florets *cylindrical*, awnless, pointed, with five slight ribs at the top. June and July. Very much resembling rye-grass, but distinguished from it by having a calyx of two valves, and its spikelets arranged in a different manner. In the rye-grass, the spikelets stand facing the spike stalk, but in the darnel-like fescue, they stand with their backs towards it.

GENUS XII. BROME GRASS, *Bromus*. The blossom of this genus has two husks or valves which are lance-shaped—the *exterior* or outer valve is obtuse, two point-

ed, putting out an awn below the tip or extremity—the inner valve is surrounded with a fringe.

Species I. *Soft Brome-grass*, B. Mollis. Meadows, pastures, and roadsides, very common. Top of a garden wall Black's Well road &c. Root biennial, fibrous. Stalk erect, a foot or more high. Leaves acute, dark green, very *soft* and *downy*. Panicle of flowers 2—3 inches long, standing *nearly* erect, contracted—spikelets oval and oblong, a little compressed, covered with *down*; flowers tiled—outer husk of the blossom divided at top—awn straight, about the length of the husk. June. This is the goose-grass of the country people. It is often found among hay. Easily distinguished by the oblong figure of the spikelets, and the downy hairs which cover them.

Species II. *Rough Brome-grass*, B. Asper. Hedges and moist woods, abundantly. In Hamilton wood, about Murdiston, Jerviston &c. Root biennial, stalk with blackish knots, four to six feet high, very rough with hairs, smooth upwards. Leaves broad, uniform, the lower ones hairy. Panicle of flowers branched, drooping, scabrous; spikelets lance-shaped, roundish, about 8 or 9 flowered; florets remote, *hairy*, longer than the straight awn. June and July. Amongst the **tallest** of our grasses, often exceeding

six feet in height. It appears to be too coarse a grass to be cultivated for cattle.

Species III. *Barren Brome-grass*, B. *Sterilis*. Fields and hedges, frequent. In the hedge between Rutherglen and Farme. Roots of hedges between Hamilton and the old Avon Bridge. Root fibrous, annual. Stalk about two feet high, upright, smooth. Leaves flaccid, soft, *downy*, (hairy at bottom.) Flower panicle very large, spreading, drooping at top, *scarcely* branched. Spikelets *linear lanceolate*, naked, varying from a green to a purple colour; florets about seven, lance-shaped, compressed, *seven-ribbed*, *furrowed*, rather remote—awn straight, longer than the husks. June, July. A common but highly elegant grass; remarkable for its long, narrow, much awned, and drooping spikelets.

Species IV. *Field Brome-grass*, B. *Arvensis*. Cornfields. Between Dalbeth and Clyde Iron works. Root fibrous, annual. Stalk from two to three feet in height, erect. Leaves spreading, slightly downy. Panicle upright, spreading, slightly branched—peduncle branched—spikelets *lance-shaped*, compressed; florets *tiled*, depressed, smoothish, with two ribs on each side—awn straight, *shorter* than the flowers. The spikelets are *generally greenish* on the upper side, an

of a purplish brown on the other. June, July.

Species V. *Wood Bromc-grass*, B. *Sylvaticus*. Woods and hedges, common. Wood about Chatelherault. At Jerviston, abundant. Roots in tufts, perennial. Stalk with purple joints, erect, 1—3 feet high, very smooth. Leaves flat, upright, rough, very *hairy*. Spike of flowers facing one way, long, slightly *drooping*—spikelets *distant*, somewhat erect, awned, awns *longer* than the husks. The outer valve of the blossom is three-ribbed. July.

GENUS XIII. REED GRASS, *Arundo*. In this family the calyx is one flowered—in the following species, many flowered—two valved. The blossoms have a quantity of long wool or hair arising from their base, by which this genus is at once recognized.

Species I. *Common Reed*, A. *Phragmites*. Very common by the sides of rivers, in ditches, and standing waters. In the dead waters at Allington and Ross, abundant. Osier strips on the roadside between Hamilton and Bellshill. Root creeping, perennial. Stalk six or seven feet high, strong, very leafy, with numerous joints. Leaves spreading, sea-green beneath, *smooth*—sheaths smooth, ligule very short. Panicle *loose, large, rather erect, purple brown, very handsome*—spikelets upright, five-

flowered. The longer husk of the calyx is three nerved—the florets are girt at bottom with a large tuft of white silky hairs. July. The heads or panicles dye woollen green. The stalks were formerly used for making weaver's pirns: the inner membrane of the stalk forms a very sensible hygrometer.

GENUS XIV. COCK'S-FOOT-GRASS, *Dactylis*. Valves of the calyx unequal, the larger one keeled—corolla two valved, inner valve folded, two-ribbed, awnless.

Species I. *Balled Cock's-foot-grass*, *D. Glomerata*. In meadows, hedges, and waste places, abundant. Road side between Ross Bridge and Ross House. Root perennial, fibrous, tufted. Stalk erect, 1—8 feet high, firm, rough, having four or five smooth purplish knots or joints. Leaves acute, dark-green, very rugged on both sides, keeled. Panicle *crowded*, very much branched; branchlets alternate, very rough the lowest remote, horizontal, the longest somewhat resembling a cock's spur; the rest of the panicle, when laid on the hand resembling the foot; spikelets in heads or dense globular *tufts*, directed to *one* side often coloured, three or four flowered. The lower valve of the blossom is bristled and nicked below the tip, the upper, two-cu and toothed. No grass is more common *than this*. It is a rough coarse grass, rather

early, flowering from June to August. It has been extensively cultivated by Mr Coke of Norfolk. The seed was first collected in any considerable bulk, by Rogers Parker Esqr. and by Messrs. Gibbs, seedsmen.

GENUS XV. DOG'S-TAIL GRASS, *Cynosurus*. Calyx two valved, 2—5 flowered, accompanied by little floral leaves (the involucre or receptacle) deeply divided into awl-shaped segments like a double toothed comb. The corolla is two valved; outer concave longer; inner flat awnless.

Species I. *Crested Dog's-tail-grass*, *C. Cristatus*. Abundant in dry pastures, flowering in July. Field at the Wood Yett. Roots in tufts, perennial. Stalks about a foot high, very-smooth, tough, having three or four joints, naked above. Leaves smooth, narrow, *linear*, acute—sheaths round, quite smooth—ligule short. Spike of flowers linear, blunt, stiff, and straight, with a sort of furrow running from top to bottom; florets all facing *one* way—the smaller valve ending in two points, the larger in a short awn. The husks generally contain three flowers. At the base of each spikelet is a rough greenish leaflet, which is beautifully cut into linear divisions like the teeth of a comb. This grass is the Windle-straw of the Scotch. The stalks are valuable for the manufacture of straw bonnets. The

seed, which is of a reddish yellow, in some instances passes under the name of golden grass.

GENUS XVI. RYE-GRASS or *Darnel*, *Lolium*. This grass is sufficiently designated by the calyx which has only one leaf which is fixed to the stalk, and many flowers.

Species I. *Common Rye-grass*, *L. Perenne*. Abundant in fields, and by waysides. (Of this well known grass, it will be necessary to give only the specific character. Root perennial. Spike awnless; calyx shorter than the spikelets; florets lance-shaped. This species was probably selected for cultivation because it is common, and the seeds are easily collected. It appears to have been used for this purpose previous to the year 1677. The varieties are very numerous—of these Mr Whitworth made a collection, which in 1822 amounted to the surprising number of sixty. The best varieties at present are: Pacy's ray-grass; Russell's grass; Whitworth's grass; Stickney's grass; Dixon's grass; Rack's grass &c. It is called ray-grass from *ivraie*, the name given to *Lolium Temulentum* by the French, who call this *fausse ivraie*.

GENUS XVII. WHEAT GRASS, *Triticum*. The calyx of this genus is two valved, solitary, many flowered. The spike stalk is zigzag and toothed.

Species I. *Creeping Wheat-grass*, or *Couch-grass*, T. Repens. Too common in all kinds of cultivated ground, flowering in summer and autumn. Roots creeping, rapid in growth, perennial. Stalk 2—3 feet high, slender, leafy, erect. Leaves flat, spreading very much, nearly one-rowed, rough on the upper surface and edge, green except in the maritime variety. Spike nearly upright, two or three inches long, flat, composed of numerous spikelets, often more or less awned. The calyces are five flowered, awl-shaped, many nerved—florets acuminate. The round, smooth, striated stalks have five or six joints, which are often tinged with red. The sweet root is used as food for horses in many countries—medicinally is a demulcent and aperient—has also been proposed as a saccharine matter for brewing; but being a troublesome weed in gardens is mostly burned. Leaves eaten by dogs as an emetic, probably acting mechanically.

Species II. *Bearded Wheat-grass*, T. Caninum. Woods and hedges, occasionally. About Skellyton. Root *fibrous*, not creeping, perennial. Stalk 2 or 3 feet high. Leaves plain, ribbed, rough on both sides. The calyx is pointed, about 5 nerved and four-flowered. The fibrous instead of the *creeping root*, the long purplish awns, and the longer and more slender flower spike,

are the most obvious marks of distinction between this and the former species.

ORDER III. *Trigynia i. e.* three pistils in each flower along with the three stamens.

GENUS XVIII. BLINKS, *Montia*. Calyx two-leaved—blossoms of one petal, seed-vessel three valved and three-seeded.

Species I. *Water blinks*, *M. Fontana*. Springy and wet places, occasionally. In a small spring on Barncluith green. June and July. Plant from 1—4 inches long, generally of a pale, and often yellowish green—succulent. The numerous stems spread on the ground, sometimes striking root, are of a reddish colour, and much branched and jointed. The leaves are of a pale green colour, smooth, opposite, and spathula shaped. The flowers are very small, white, usually appearing in a half opened state, whence the English name Blinks—but when the sun shines on them they expand.

CLASS IV.

THIS CLASS COMPREHENDS ALL THOSE PLANTS WHICH HAVE FOUR STAMENS (TETRANDRIA) ALL OF EQUAL LENGTH. ORDER FIRST, ONE PISTIL, MONOGYNIA. THE GENERA ARE.

GENUS I. TEASEL, *Dipsacus*. Involucre many leaved; calyx, double,—outer very minute, angular—inner, pedicelled, cup-shaped. Receptacle chaffy, chaffs spinous, longer than the flowers. A genus with great rough heads of flowers resembling a bottle brush.

Species I. *Fuller's Teasel*, D. Fullonum. On the Avon immediately above Barncluth. A few plants about Craignethan Castle. In July A strong, angular, prickly plant four or five feet high, with leaves meeting at the base so as to form a sort of cup which retains water. The heads of the flowers are large, prickly, cylindrical, and have little purple blossoms which first make their appearance about the middle of the heads. This species is distinguished from the D. *Sylvestris* by having its chaffs hooked at the tip. Heads used to raise the nap on woollen

cloth to hide the interwoven texture. Extensively cultivated in England.

GENUS II. SCABIOUS, *Scabiosa*. The involucre has many leaves; the Calyx is double—the outer four toothed, superior, indistinct, contracted above—inner with five or many teeth, feathery or bristly. Receptacle chaffy or naked.

Species I. *Devil's-bit Scabious*, *S. Succisa*. In fields and meadows frequent, in July and August. Barncluith green. Roatside near Wishaw Distillery &c. A plant one or two feet high, bearing globular heads of flowers, which are of a violet purple or flesh colour. The stem is leafy, generally of a purplish colour, nearly simple or branched above. The lower and upper leaves *not* cut, middle ones toothed, never pinnatifid—all hairy. The flowers which are collected into heads which are nearly globular, are cleft into four equal segments. Root as it were cut off abruptly, or bitten—hence the name Devil's bit—This herb dyes yellow and green; a strong decoction alterative, leaves good in coughs and other disorders of the lungs.

Species II. *Field Scabious*, *S. Arvensis*. Fields and pastures, in July, not common. In a dry sandy field near Tollcross. Fields about Uddingston. Field at Silvertonhill, abundant. Somewhat taller than the above species, and distinguished from it by its

radiating flowers *i. e.* by having larger blossoms, which surround the head of purplish flowers, forming a sort of *ring*. The leaves in this species are also pinnatifid or winged, and the root *not* bitten, but running deep into the soil. The receptacle in this is hairy, in the former, honeycombed. The inner florets are pale reddish and have equal segments; the larger ones in the ring are purplish blue, and have unequal segments. The stem is branched and hispid. When held over a lighted pipe of tobacco, the flowers change to a bright green.

GENUS III SHERARD, *Sherardia*. Calyx with two lobes, each lobe 2 or 3 toothed; blossom funnel shaped with a long tube and a 4-cut margin; fruit dry, crowned with the calyx.

Species I *Field Sherard*, *S. Arvensis*. In dry waste places during the summer. About Strathaven and Cambuslang. Hedge root at Clyde-side Toll-house. A slender, rough, dark green plant, trailing on the ground, with little pale blue flowers, and whorled leaves—from four to seven inches long. Leaves obovate, about 6 in a *whirl*, the keel and edge rough. The minute pale blue flowers are in *sessile* umbles, and have an 8-leaved *involucre*. The root has generally many reddish brown fibres attached to it.

GENUS IV. BED-STRAW, *Galium*. Calyx very small; corolla flat, rotate or bellshaped, 4-cleft; fruit dry, globular, crowned with the calyx. All this genus have their leaves in whirls.

Species I. *Yellow Bed-straw*, *G. Verum*. Hedges and woodsides, in July and August. By the road to the Roman Bridge. By the Clyde below Dalziel camp &c. A plant from 9—18 inches high, having numerous small, narrow, blackish green leaves disposed about the stalk like the rowels of a spur,—and small yellow flowers growing in great tufts on the tops of the stalks, which smell like honey. The leaves are 8 in a *whirl*, linear, furrowed, rough above, entire. The flowering branches are short and many flowered. The stalk is angular, whitish, brittle, seldom straight. The root dark green, creeping. The French prescribe the flowers in hysteric and epileptic fits. The root dyes a fine red, the flowers with alum yield a fine yellow, and coagulate milk when boiled with it.

Species II. *Crosswort*, *G. Cruciatum*. In woods and hedges, in May, frequent. Carriageway at Chatelherault &c. About the size of the last but differs in having only 4 leaves in a whirl which are egg-shaped, *hirsute*, 3-ribbed, and of a light green colour. The stem is angular, hairy, branched

at the base and simple above. The flowers are 4-cut, yellow, some of them have only stamens—the flower stalks are 2-leaved.

Species III. *Marsh Bed-straw*, G. *Palustre*. Watery places, in July. Wrangham loch Holytown. Deadwaters Allanton &c. This has a smooth, depressed, 4-sided stem, branched above; leaves mostly rough on the edges, 4 or 6 in a whirl, reverse ovate, blunt, unequal in size. The flower stalks are umbelled, 3-forked, and 3-flowered, with a two leaved involucre at the base of each ternate division. The blossoms are small, and white.

Species IV. *Rock Bed-straw*, G. *Saxatile*. On dry banks and heathy places, in July and August, frequent, Barncluith green, plentiful. Between Newhouse and Shotts, &c. A small plant, with large roots, producing numerous, smooth, angular stems, which have many branches, with small white flowers, often powdering extensive tracts of dry heath with a snowy whiteness. The stems are much branched, smooth and prostrate. The leaves 6 in a whirl, reverse ovate, blunt and mucronate. The panicle is three forked; the flowers milky.

Species V. *Great Hedge Bed-straw*, G. *Mollugo*. Woods and hedges, in July and August, rare. Cartlane craigs north side. Clyde at Carmyle. On the Avon between

Broomhill and Avonholm. A tall plant often four feet high. The stems are smoothish, weak, angular, branched, thick above the joints—branches spreading much. Leaves 8 in a whirl, ovate, linear, much spread, mucronate, edge rough, rather smooth. The flowers are numerous, white, in panicles—panicles spread, forked, much branched.

Species VI. *Northern Bed-straw*, Boreale. Banks of Rivers, in July. (the Clyde opposite Ross. On the old dam at Dalziel Camp, abundant, at Carmyle &c. It has four lance-shaped leaves in a whirl which are smooth and three-ribbed. The stems are 12 or 18 inches high, stout, obscurely 4 cornered, branching at the top, the lower part smooth, the upper slightly hairy. The panicle of flowers is three-forked, the blossoms copious, milk white. The fruit is covered with long, soft, whitish hairs, slightly incurved upwards.

Species VII. *Rough Bed-straw*, G. Aparit. Hedges and cultivated grounds, abundant. Hedges between Hamilton and Barnclugh &c. A tall, slender, straggling plant, known by sticking to people's clothes as they touch it. It has eight leaves at a joint, rough lanceolate, keeled. The stalks are square and very rough, weak, flaccid, unable to support themselves,—running up in hedges. The flowers are small and

—the seeds grow two together, and, like the rest of the plant, are rough with prickles pointing backwards. Called Robin-run-a-hedge, Goose cleavers, Goose-grass &c. This plant is reckoned to purify the blood. The expressed juice is used to remove those cutaneous eruptions, which are commonly though improperly called scorbutic.

GENUS V. WOODRUFF, *Asperula*. Calyx very small; corolla funnel-shaped, with a long tube; fruit dry, corklike, not crowned with the calyx.

Species I. *Sweet Woodruff*, *A. Odorata*. In woods and upon the banks of dingles and ravines, in May and June, plentiful. By the Duke's railway. Banks of the burn at Simpsonland &c. A plant so well known that I give only the specific character. Leaves lance-shaped, 7 to 9 in a whorl; flowers in bundles with footstalks; fruit hispid. While drying it exhales a pleasant fragrance like new mown hay—frequently worn in watch cases.

GENUS VI. PLANTAIN, *Plantago*. Blossom 4-cut, the segments bent back—anthers oblong—seed-vessel 2-celled, 2 or many seeded.

Species I. *Greater Plantain*, *P. Major*. A common plant in pastures and way sides, with broad short leaves, and long, slender, cylindrical spikes of seeds. The leaves,

(vulgarly called the *Wayburn-leaf*) are spread on the ground, *egg-shaped*, 7 or 9-ribbed, large, toothed or not cut, mostly on *longish* foot-stalks. The stalk from the centre of the spreading leaves 6-12 inches high, the lower half is naked, the upper part is a very long *cylindrical* spike, of inconsiderable flowers of a greenish white colour, about 30 or 40 in number. The seeds are brown and small, *many* in the cells of each seed-vessel. At the base of each flower is a concave bractea. The variety *P. rosea spicata*, with a leafy spike, may be seen in the garden of Mr Robert Thomson Grocer Hamilton. Leaves applied as a dressing to fresh wounds. One of the principal ingredients in the remedy of the Negro Cæsar for the bite of the Rattle-snake. Formerly reckoned among the most efficacious vulnerary herbs.

Species II. *Ribwort Plantain*. Common in pastures, flowering in June and July. Field near Beaton's Yett &c. This species has *lance-shaped*, dark green leaves which are mostly 5-ribbed, all springing from the root. The flower-stalk or scape is angular and woolly—the spike of flowers is not cylindrical but *egg shaped*. This plant has been introduced into culture under the name of Rib-grass, as a good food for sheep. *Although* practical men hold it in some

esteem, Dr Smith, Dr Withering, and Mr Curtis, do not approve of it as a pasture or meadow herb.

Species III. Sea Plantain, P. Maritima. Road side at Gour's Brae-head Avondale, and near the entry of the avenue into White-moss Kilbride. Often found 25 and 30 miles from the sea coast. This plant varies much in size. The leaves are linear, half-round, grooved above, not in the least cut, *fleshy*, woolly at the base. The scape is *round*, downy, longer than the leaves—the spike of flowers is narrow, dense, *cylindrical*. The bracteæ are keeled, and the tubes of the corolla woolly. Readily distinguished by its smooth, fleshy leaves, grooved above, and woolly at their base, and the narrow spike, however short, always cylindrical.

GENUS VII. CORNEL, *Cornus*. This genus has a 4-toothed calyx, a 4-petaled blossom, and a drupe or berry, the nut or stone of which, is 2-celled and 2-seeded.

Species I. Bloody Cornel or Dogwood, C. Sanguinea. At Woodhall near the lake. A shrub five or six feet high. Stem *arborescent*; branches *upright*, opposite, dark purple; leaves *egg-shaped*, green on *both* sides, not in the least cut, strongly veined; flowers in cymes, *without* an involucre, white, *with a heavy smell*; berries globular, dark purple, very bitter, oily, styptic. The wood

smooth and hard, used for skewers. The leaves change to a blood red in autumn. In foreign countries, a lamp oil is extracted from the berries.

GENUS VIII. PELLITORY-OF-THE WALL, *Parietaria*. This genus has a 4-cleft calyx. Stamens *elastic* (the filaments at first incurved, afterwards spreading elastically—anthers double, opening elastically.) The fruit has only one seed, enclosed in the enlarged perianth. A few of the flowers have only pistils.

Species I. *Common Pellitory-of-the-wall*, *P. Officinalis*. On the Ruins of Bothwell Castle, abundant. Old wall between Rutherglen and Farme. It grows a foot high, with weak branches, and pale green leaves—and flowers in September. The stems are numerous, angular, much branched, reddish or purplish; leaves *lance-egg-shaped*, somewhat shining above, hairy beneath, base one-ribbed—the lateral ribs are palmate, springing out above the base; flowers small, in threes, (the centre one with a pistil only) of a whitish green colour when open, but reddish in the bud, growing in balls or clusters in the axils of the leaves. *Involucre* of many (6 or 7) ovate leaflets. *The leaves are strewed in granaries to drive away weevils. The juice is diuretic, and contains nitre, sometimes in considerable*

quantities. The plant is found on walls or among rubbish.

GENUS IX. LADIES' MANTLE, *Alchemilla*. The involucre is 8-cleft, the four outer segments, resembling bracteas, smaller. The fruit is one seeded, naked.

Species I. *Common Ladies'-mantle*, *A. Vulgaris*. Fields and hilly pastures, abundant. Clyde side above Ross garden &c. The smaller variety, *A. minor*, with pubescent leaves, grows on Barncluith green. An elegant plant, about a foot high, with bunches of little yellowish green flowers, and handsome kidney-shaped leaves, scoloped round the edges. Stems from the middle, round, a little hairy, branched and paniced; leaves very beautiful, large, *Kidney-shaped*, 7—9 *lobed*, lobes blunt, finely serrated, on long leaf-stalks—the stem leaves are smaller, without leaf-stalks, and have two deeply toothed stipules or leaf-like substances: flowers small, in many rather lax, corymbose clusters, yellowish green.

Species II. *Field Ladies' Mantle*, *A. Arvensis*. Common in barren sandy land. Field at Covant burn bridge. Wall top at Castlehill &c. A little leafy plant, with leaves much cut, and small insignificant flowers. Stems many, very leafy, 4 or 6 inches long, much branched, more or less prostrate; leaves roundish, 3-lobed, the

lobes *irregularly* and *deeply* cut, marked with lines—the stipules partly arising from the leaf-stalks are deeply cut; flowers without flower-stalks, in the axils of the leaves, green, insignificant. The *Aphanes Arvensis* of some botanists, also called Parsley Piert.

ORDER III. TETRAGYNIA, four pistils in each flower along with the four stamens.

GENUS X. HOLLY, *Ilex*. Calyx very small, 4 toothed; blossoms wheel shaped, 4-5-cleft, (or 4-petaled, soldered at the base.) The berry contains four 1-seeded nuts. Some flowers with anthers only. The stigmas are sessile.

Species I. *Common Holly*, *I. Aquifolium*. Common in woods and hedges. A well known bush. Stem arborescent or shrubby; leaves ovate, acute, evergreen, shining waved, *spinous*, the upper unarmed; flowers white, in axillary clusters; berries numerous, bright scarlet. Wood hard, smooth; bark yields birdlime; berries used in colic.

GENUS XI. POND WEED, *Potamogeton*. This genus has a single 4-leaved perianth; sessile anthers; 4 naked seeds. The spikes are furnished at the base with two spathes. Mostly long trailing plants, which grow in the water.

Species I. *Floating Pondweed*, *P. Natans*. Abundant in the Clyde and in ponds. Above Bothwell Bridge &c. Stem very

long, leafy; upper leaves *oblong-ovate*, on *leaf-stalks*, *floating*, the base roundish, cordate—lower leaves linear, submersed, tapering into *foot-stalks*; peduncle single, with linear bracteas at the base—spike simple, above water,—flowers dirty green.

Species II. *Various-leaved Pondweed*, P. *Heterophyllum*. Old run below Hamilton Bridge. Bardowie Loch E. side. Stems branched, leafy; upper leaves *floating*, elliptical, on leaf-stalks, leathery, narrowed at both ends, scored, pale green, or olivaceous—lower leaves under water, crowded, *sessile*, linear lanceolate; sheaths oblong, bluish; spike greenish.

Species III. *Long-leaved Floating Pondweed*, P. *Fluitans*. Clyde at Dalbeth, and between Blantyre Mills and Bothwell Bridge. Root creeping. Stems flat, very long; upper leaves *floating*, lanceolate oval, narrower at both ends, reddish green, finely veined, alternate—lower leaves under water, long, linear lanceolate acute—sheath wide, spear-shaped—spike dense, reddish, an inch long, almost submersed. August, September.

Species IV. *Perfoliate Pondweed*, P. *Perfoliatum*. Common in Rivers and ponds. Clyde below the sands at Hamilton Bridge &c. *Stem* round, recurved, alternately branched; leaves *heart-shaped*, embracing

the stem, shining, single ribbed, *all* immersed; stipulae none; spike erect, on a rather short peduncle, oblong, brown, every part of the plant, except the flower-stalks, is under water—the flowers appear in July and August. It would seem that the respiration of such truly aquatic vegetables, must be as different from the respiration of those which inhale atmospheric air, as the breathing of fishes is from that of birds and beasts.

Species V. *Shining Pondweed*, P. Lucens. Frequent in the Clyde. Plant keeps under water with only the spike above the surface. Stems long; leaves large, flat, *ovate-lanceolate* on leaf-stalks, shining, beautifully veined; stipules the length of the joints, embracing the stem, leaflike; spikes many flowered, reddish, longer and more crowded with flowers, than in any of the other species of this genus. July.

Species VI. *Close Pondweed*, P. Densum. In the Clyde below Hamilton Bridge. Bardowie Loch. Herb sunk. Stem round, forked, closely leaved; leaves ovate, pointed, opposite, crowded; spike usually 4-flowered, sometimes 2-flowered, pale green; peduncle slender, terminal. June July.

Species VII. *Curled Pondweed*, P. Crispum. In the Clyde at Dalziel Camp &c. Herb sunk. Stem slightly compressed; leaves lanceolate, tapering, sessile, remarka-

bly *waved, serrate*, crisp to the touch as well as to the eye, dark green ; spike few-flowered—flowers reddish, remote. June, July. A common species.

GENUS XII. PEARL WORT, *Sagina*. Calyx four leaved ; blossom four petaled, very small : seed-vessel 1-celled, 4-valved, many seeded.

Species I. *Procumbent Pearlwort*, *S. Procumbens*. Common in sand and on old walls. On the rock by the road to Tuphall &c. A very little plant. Stems many, trailing, smooth, rooting, 2—4 inches long ; leaves *linear, pointed*, smooth, connate—the root ones in tufts ; flowers yellowish, petals very *short*, not cut, axillary, on slender peduncles, longer than the leaves, drooping before flowering—calyx spreading, blunt.

Species II. *Bloomless Pearlwort*, *S. Apetala*. Sandy places and walls, occasionally. Stems many, nearly upright, downy, not rooting ; leaves *awned*, hairy, narrower than in the last ; petals very *minute*, or wanting—flower-stalks long, hairy ; seed-vessel *longer* than the calyx—seeds girt with a black line. Root annual, small and fibrous. Both flower in June and July. Smaller, of a paler green than the last, and much finer in its stalks ; its leaves are also *shorter by one half, and less succulent*.

CLASS V.

FIVE STAMENS IN EACH FLOWER, PENTANDRIA. ORDER 1st, ONE PISTIL IN EACH FLOWER ALONG WITH THE FIVE STAMENS, MONOGYNIA—PENTANDRIA MONOGYNIA.

An extensive class, containing about a fifth part of plants belonging to the 23 first classes. It fortunately comprehends several natural orders, which, by being grouped together, are more easily acquired.

1. *Asperifoliæ*, rough leaved plants. These have a calyx of one leaf, with 5-clefts or divisions; a blossom of a tubular shape, also of one petal, and the same number of segments: the five stamens are fixed to the tube of the blossom, and there are four naked or uncovered seeds enclosed by the calyx. These were lately re-arranged in a scientific manner by M. Lehman.

GENUS I. SCORPION GRASS, *Myosotis*. Calyx 5-parted, or toothed; blossom salver-shaped, the tube or throat closed with scales and concealing the stamens—the limb or border parted into five blunt lobes; nuts 4, distinct, smooth. The anthers are peltate—the stigma capitate.

Species I. Wood Scorpion-grass, M. Sylvatica. In woods, flowering all the summer. Near the porter's lodge Ross &c, Root

fibrous. Stems many, about 1 foot high, upright, with soft, spreading hairs, divided at top into very *long, loose* flower branches; leaves fringed, oblong lanceolate, rather blunt, with *soft* hairs—the root ones, as in all the species, spatula-shaped; flowers red before opening, but when open of a fine blue with a yellow eye, not more than a tenth or a twelfth of an inch in diameter; calyx close, 5-parted, segments unequal, acute, hairs *long, downy*—limb spread out longer than the tube. The flower-stalk spread out while in fruit, becoming rather longer than the calyx.

Species II. *Marsh Scorpion-grass*, or *Forget-me-not*, *M. Palustris*. Common in damp fields and rivulets. Ditch beyond Raith. Deadwaters Ross. Wrangham Loch &c. Plant light green. Root creeping. Stems rather creeping at bottom, simple; leaves oblong lanceolate, blunt, rather *rough*, with short mostly *oppressed* hairs; racemes rather short—blossom of an elegant pale blue, like smelt, with a large deep yellow eye—flower-stalks (in fruit) divergent, twice as long as the 5-cleft patent calyx. The hairs of the calyx erect, straight, and in this and the former species, the limb of the corolla is *longer* than the tube. This plant, so celebrated in German love-song, under the emblem of "*Vergil's mich nicht*"

has hence been made to signify "forget-me-not" by all the modern sonnet writers of Europe.

Species III. *Field Scorpion-grass*, M. Arvensis. Common in dry fields, waste places, and road sides. In this, the limb of the blossom is about *as long as* the tube, and the hairs of the calyx are *hooked*. The leaves are *oblong-lanceolate, pointed, hairy*,—racemes very long—flower-stalks (in fruit) patent, twice as long as the 5-cleft and closed calyx. The plant is from 6—18 inches high, the stems are branched and hairy.

Species IV. *Changeable Scorpion grass*, M. Versicolor. Frequent in barren sandy places. Wall top at Castlehill. At Chatellerault, abundant. This has small sky-blue or pale yellow flowers—the colours often mixed. The spreading limb of the calyx is *shorter* than the tube—the hairs of the calyx are patent and *hooked*—the flower-stalks (in fruit) are erect, patent, *shorter* or as long as the 5-cleft acute close calyx. Plant from one inch to a foot high. Stems one or many, middle one upright, side ones ascending—racemes terminal, very long, spike-shaped—Some botanists embrace all of these under M. Scorpioides.

GENUS II. GROMWELL *Lithospermum*. Calyx 5-parted, persistent, lobes unequal, *growing connivent*, not prismatic. Blossom

funnel-shaped, with a 5-cleft obtuse limb, and an open orifice. Anthers included, nearly sessile, oblong—stigma obtuse, bifid—seeds 4 hard, smooth, closed at the bottom.

Species I. *Common Gromwell*, L. *Officinale*. Western Tower of Bothwell Castle. Stem 1—2 feet high, round, upright, *very much* branched, covered with rigid, appressed hairs; leaves nearly sessile, broad, *lanceolate, veined, pointed*,—above dark green, very rough—below, paler, *hairy*, as long as the calyx. Nuts *smooth*, highly polished, whitish brown, hard as stones—hence the generic name, from LITHOS a stone, and SPERMA grain. Seeds a powerful diuretic. June.

Species II. *Corn Gromwell*, L. *Arvense*. Fields about Bogle's hole. This species has rough wrinkled nuts—the tube of the white or whitish yellow blossom is a little longer than the calyx, the segments of which *expand* when in fruit. Stem erect, branched above, rough; leaves sessile, lanceolate acute, *veinless*, narrowed at the base, rough, hairy, rigid, rather fringed; calyx segments *thrice* as long as the fruit. The bark abounds with a deep red dye, which stains paper and linen, and is easily communicated to oil. In Sweden, the juice of the root is used on days of festivity to stain the face.

GENUS III. ALKANET, *Anchusa*. Calyx 5-cut or toothed, becoming bell-shaped and inflated—blossoms funnel-shaped, 5-lobed, lobes equal, orifice closed with 5 prominent scales—anthers included in the throat of the corolla—stigma emarginate—seeds gibbous, with a sculptured surface.

Species I. *Ever-green Alkanet*, *A. Sem-pervirens*. Craignethan Castle. Rubbish at Woodhouse. Behind the garden wall at Chatelherault. Banks of the Avon opposite Cadzow Castle, very abundant. A coarse rough plant with splendid blue flowers whitish in the centre. Stems many, 1—2 feet high, rough and hairy, upright, branched at top, angular; leaves acute, *lance-shaped*, deep dark green, hispid, not in the least cut; flowers blue, in small *clusters*, on axillary peduncles, accompanied by *two leaves*, flower-tube as long as the calyx, the centre closed with 5 upright arches or valves, from which a white line passes to each of the 5 rounded lobes of the blossom.

GENUS IV. LUNGWORT, *Pulmonaria*. Calyx 5-cut, prismatic, 5-sided, when in fruit bell-shaped—blossom funnel-shaped, with an open hairy throat, cylindrical tube, and obtuse 5-lobed limb—stigma obtuse—seeds 4, top-shaped, not perforated at the *bottom*.

Species I. *Shop Lungwort*, P. *Officinalis*. Clyde about Dalbeth and Easter hill. By the upper wall of Bothwell Castle, but generally cut down with the grass. Stems many, about 1 foot high, simple, upright, somewhat angular, very rough; leaves rough, root ones ovate cordate, acute, petioled—upper stem ones sessile, egg-shaped, frequently spotted like the lungs (hence the name) with whitish green spots; flowers purple or purplish blue, flesh coloured before expanding, pedicelled, when in fruit drooping—the flower tube is a little longer than the calyx—Yields a large quantity of ashes when burned.

GENUS V. COMFREY, *Symphytum*. Calyx 5-parted, acute—blossom cylindrical, bell-shaped, with a short tube and a tubular inflated limb, throat with 5 awl-shaped ridges or rays, forming a cone—seeds gibbous, not pierced at the base.

Species I. *Tuberous Comfrey*, S. *Tuberosum*. Moist shady places, abundant. Banks Bothwell Castle. Burnside at Grove Mount &c. Root tuberous, white on the inside. Stem *simple*, divided at top into peduncles; leaves *ovate-oblong*, narrower at the base, lower ones petiolate, upper ones sessile, a little decurrent—not in the least hairy above, smoother and paler beneath, *veined*; flowers yellowish or greenish

white, in a branched terminal, subracemed-like cluster, divided at its base into 2 main branches, rough. In this, the segments of the Calyx are longer and more linear than in the following. It flowers in July, and was first discovered, in Britain, by Mr Yalden, opposite St Bernard's well Edinburgh.

Species II. *Shop Comfrey*, *S. Officinalis*. Watery places, not common. In a young plantation a few hundred yards above the New Mill dam. About Glenhove, Newmonkland, chiefly the purple or reddish variety. Root cylindrical, black. Stems many, 1—3 feet high, hispid, very leafy, branched, winged above; leaves waved, ovate-lanceolate, narrower at the bottom, very decurrent, and winging the upper part of the stem, above, very rough, beneath, hirsute, flowers in two branched clusters, drooping, becoming upright,—blossom bellied, yellowish white or purple—calyx pointed, hirsute.—The shoots of this plant are a good pot-herb—it flowers in May and June.

GENUS VI. SMALL BUGLOSS, *Lycopsis*. Calyx 5-parted—blossom funnel-shaped, 5-lobed, with a covered tube and obtuse limb—scales at the orifice upright, blunt—nuts hollow at the base.

Species I. *Field Bugloss*, L. *Arvensis*.
 Common by way sides. New cut beyond
 Avon Bridge. Road side about Raith &c.
 An extremely harsh, rough, and bristly
 plant. Stem upright thick 12—18 inches
 high, branchy—branches erect; leaves *lan-*
ceolate, with shallow *sinuses* or minute *teeth*,
 wavy very *hispid*, flowering, the root ones,
 and those on the lower part of the stem
 with leaf-stalks, the upper ones sessile or
 half embracing the stem; racemes two,
 terminal, leafy, obtuse—blossom sky-blue,
 varying to red and white—generally bright
 blue finely veined with white with a white
 centre, and unequal lanceolate lobes; calyx
erect while in flower, as long as the *bent*
 tube. The hairs or bristles of the whole
 plant are seated on a white calous tubercle
 or bulb. Recommended as a remedy for
 Anthrax or Carbuncle by laying the bruised
 plant on the tumour or corrosive ulcer.

2. The 14 following Genera have also blossoms of one
 petal, but are destitute of the hairs or bristles by which the
Asperifoliæ are more or less characterized. They constitute
 part of the *Rotaciæ* and *Preciæ* of Linneus, of the
Lysimachiæ of Jussieu, and of the *Annagallidæ* of Adan-
 son &c.

In the 10 first genera the blossom is
 placed below the germen, in the 4 which
 follow, above it.

GENUS VII. PRIMROSE, *Primula*. Calyx
 5-toothed, blossom salvershaped, the tube

beneath ; flowers in a *terminal* panicle, *many* on each flower-stalk, large, yellow. It derives the English name Loosestrife, from the quality ascribed to it by the Ancients, of quieting oxen when put upon their yokes.

Species II. *Tufted Loosestrife*, L. *Thyrsiflora*. Bay in the Forth and Clyde Canal, at Castlecary Bridge, along with *Menyanthes Trifoliata*, about 16 miles from Hamilton—a very rare plant. Root creeping. Stems erect, 1—2 feet high, simple, in tufts, porous, jointed, round, succulent ; leaves *opposite, lanceolate*, acute, smooth, entire ; flowers numerous, small, crowded in *axillary, pedunculated, lateral* racemes—blossoms (*many* flowers on each flowerstalk) fine yellow, spotted with orange, deeply cleft into lanceolate segments. July.

Species III. *Wood Loosestrife* or *Yellow Pimpernel*. In moist woods and groves, frequent. Mauchlan-hole, Kilbride. Banks between Avon Bridge and Barncluth. Road side between Cadzow Castle and the Avon, and by the railway. Stems several, branched, 6—14 inches long, grooved on each side alternately, smooth, reddish, rooting from the lower joints, *creeping* ; leaves bright green, entire, *ovate, acute, petiolate* ; *flower-stalks* with only one flower—flowers lively yellow, cleft into five ovate-acute lobes. In

this species the stamens are *smooth*, and the segments of the Calyx *linear subulate*. The whole summer.

Species IV. *Moneywort*, L. *Nummularia*. Rare. On the Clyde at Bothwell, and Daldowie. Stem compressed, *creeping*, mostly simple; leaves roundish, rather *heart-shaped*, pale green, often perennial; flowerstalks with *one* flower—flowers yellow, about the same size with the leaves. The stamens are *glandulose*, and the calyx leaves *ovate*, acute. The whole plant is smooth. June and July.

GENUS X. PIMPERNEL, *Anagallis*. Calyx 5-partite. Corolla wheel-shaped. Stamens hairy. Seed vessels opening horizontally *i. e.* bursting transversely all round.

Species I. *Common Pimpernel*, A. Arvensis. Cornfields, gardens, and by waysides, common. June, July. A little plant with bright scarlet flowers. Stems much branched, square beneath, entire, longitudinally veined; flowers bright scarlet, on solitary, axillary peduncles—margin of the blossom glandular, hairy, broadly and very obtusely *crenate*. The blossoms open in the morning and close in the afternoon, except in rainy weather, when they do not expand at all; hence it is called the poor Man's Weatherglass.

Species II. *Bog Pimpernel*, A. *Tenella*. Stockbridge, Lesmahagow. Roots peren-

nial, numerous. Stem creeping, branched, very slender, 2—3 inches long; leaves ovate, sharpish, very small; blossom large, of a pale red colour, with deeper veins—filaments covered with a white down—A beautiful little plant growing in bogs, very rare in this part of Scotland.

GENUS XI. BINDWEED, *Convolvulus*. Calyx 5-cleft—corolla bellshaped, 5-plaited, 5-angled—stigma 2, threadshaped—seed-vessels 2 or 3-celled—seeds 2. Climbing plants, with twining milky stems.

Species I. *Small Bindweed*, *C. Arvensis*. Fields, not common. Roots white, milky, most inveterate creepers. Stem angular, climbing, 1—3 feet long, slender, twisted, often prostrate from absence of any support. Leaves *arrowshaped*, tip and barbs *sharp*, alternate, smooth, running out into two points behind. Flowers about an inch broad, elegantly variegated with red and white, sometimes wholly white—flowerstalks mostly one-flowered, 4-sided, with one pair of minute, linear bractes, a little above the middle. This plant in some places is the pest of gardens and arable land, but here it is extremely rare. June, July.

Species II. *Great Bindweed*, *C. Sepium*. Hedges and woods. Hedges near Fairholm, Mauldslee, Hamilton farm, and Bogle's Holè. July, August. Root creeping

as in the last. Stem angular, twining, climbing extremely to many feet. Leaves large hanging down arrowshaped, lobes *truncate i. e.* appearing as if bitten off. Flowers large, handsome, 2 inches broad, white, flesh, or deep-rosecoloured—flower-stalks one flowered, 4-sided, with one pair of large cordate bractees, half as long as the calyx, and close to the flower. The roots of this plant yield a juice, similar to that purgative substance called scammony, which is imported in large quantities from Aleppo.

GENUS XII. JACOB'S LADDER, *Polemonium*. Blossom wheelshaped, 5-partite—stamens inserted on the five valves enclosing the orifice of the corolla—seedvessel 3-celled, 3-valved.

Species I. *Jacob's Ladder*, *P. Cœruleum*. On the Calder below Cleland, growing with *Inula Helenium*, and on the banks of the Avon at Barncluith, abundant. July. Stem erect, rising to the height of 18 or 20 inches, leafy, paniced, pubescent, angular. Leaves *pinnate*—leaflets from 14 to 17 pair, ovate, unequal at the base. Flowers erect in bunches, on the top of hollow channelled stalks, large, blue, sometimes white—calyx *longer* than the *tube* of the corolla. Common in gardens, also called Ladder to Heaven, blue flowered *Polemonium*, and Greek, Valerian.

GENUS XIII. MULLEIN, *Verbascum*. Calyx 5-partite—blossom wheelshaped, irregular—stamens declined, mostly hairy—seed-vessel 1-celled, 2-valved.

Species I. *Great Mullein*, V. Thapsus. On the old walls at Calderwood and Barncluith. Stem simple 3—5 feet high, leafy, winged, woolly. Leaves *decurrent i. e.* running down the sides of the stem, woolly on *both* sides, alternate, ovate-oblong. Spike of flowers terminating, erect, cylindrical, many flowered—flowers sitting, closely set, bright yellow, sometimes, but rarely white—stamens unequal in length, yellow, hairy. A large woolly plant frequent in gardens.

GENUS XIV. CENTUARY, *Erythræa* or *Chironia*. Calyx 5-sided, 5 cut—blossom funnel-shaped, tube cylindrical, limb short—anthers twisted like a screw after flowering—stigma capitate, two-parted—seedvessel linear 2-celled.

Species I. *Common Centuary*, E. Centuarium. In dry pastures, July and August. About Cornsilloch, Blantyre, Field behind the offices at Jerviston &c. Root branched. Stem 3—12 inches high, *somewhat* branched, 4-angular, forked. Leaves *ovate*, oblong, 3-ribbed, smooth, the root ones crowded. *Flowers large*, rose coloured, without flower-stalks, *panicled*, girt at the base with one or *two scales*—calyx shorter than the tube of

the corolla. The blossom expands in sunny weather, but is closed when the weather is bad. Rather a solitary plant, seldom growing many together.

GENUS XV. NIGHTSHADE, *Solanum*. Blossom wheel shaped, 5-parted, lobes equal, reflected with two green spots at the base of each—berry 2-celled.

Species I. *Woody Nightshade* or *Bittersweet*, *S. Dulcamara*. Damp hedges and sides of Rivers. June, July. Hedges by the road side between Hamilton and Dalsarf. Hedges in the Ross Haugh, by the Avon between Ross bridge and Haughhead &c. Root woody, smelling like the potato. Stem shrubby, thornless, branched, flexuous, somewhat climbing. Leaves on leaf-stalks, smooth, alternate, not cut—the lower leaves heart-shaped, in shady places often very large—the upper irregularly hastate or spear-shaped. Flowers in lax corymbs, opposite or terminal, drooping—blossoms violet, flesh coloured, or rarely white, each of the five segments with 2 green tubercles at the base—berries scarlet, very juicy, bitter and poisonous. A shrubby plant with a bloom like the potato, of which it is one of the species. Esteemed as a restorative and alterative, far superior to China or *Sarsaperilla*.

GENUS XVI. PERIWINKLE, *Vinca*. Calyx 5-parted—blossom salvershaped, twisted—seed-vessel a follicle, upright—seeds destitute of seed-down.

Species I. *Lesser Periwinkle*, *V. Minor*. At Blantyre Priory, Bothwell Castle, Barncluith &c. abundant. Root creeping. Stems *procumbent*, round, smooth. Leaves evergreen, glossy, oblong-lanceolate, *smooth* at the edge. Flowers axillary, one on a flower-stalk which is longer than the leaves—blossom violet, mouth white—teeth of the calyx *lanceolate*. A low, smooth, shining plant, which covers the ground in shady places in large masses. The structure of the flower displays wonderful contrivance. A white variety grows abundantly at Barncluith.

GENUS XVII. BELL FLOWER, *Campanula*. Blossom bell-shaped 5-cut—threads of the stamens dilated at bottom covering the top of the seed-vessel—stigma 3-parted—seed-vessel 3-5-celled opening by perforations on the side.

Species I. *Round-leaved Bellflower*, *C. Rotundifolia*. This is the little blue bell-flower which covers the borders of fields, and hilly pastures, in the months of August and September. Root woody. Stems *upright*, round, much branched, diffuse, about *a foot high*. Leaves—radical ones, rather *roundish*, deeply crenated, soon withering—

those on the stem *linear, entire*. Flowers paniced, drooping, tremulous, blue, rarely white. Lobes of the calyx not cut, spreading. This is the Blawart or Blue bell of Scotland, so celebrated in scottish song. It grows abundantly on Barncluith green. The white variety is found near the Kirk of Shotts.

Species II. *Broad-leaved Bellflower, C. Latifolia*. Woods and banks of streams, frequent. Near the hedge between Avon Bridge and Haugh-head farm house. Hamilton wood, Crossbasket, Jerviston, Daldowie, Cambuslang &c. Stem erect, *round*, simple, 2—4 feet high, hispid, many flowered. Leaves *ovate-lanceolate, rough*, irregularly *serrated*, on short leaf-stalks, alternate, large. Flowers axiliary, *one* or two together, *pedunculate*, drooping—blossom large, bell-shaped, purple, the segments triangular, divided by a line, the lobes somewhat reflexed—calyx serrated—fruit drooping. A large showy plant abounding with a milky liquor.

GENUS XVIII. LOBELIA, *Lobelia*. Blossom irregular, cleft lengthwise on the upper side—anthers united into a tube—seedvessel 2-3-celled.

Species I. *Water Lobelia, L. Dortmanna*. Lochs on the borders of Oldmonkland Parish. Root white. Scape 1 foot high, *round, hollow, smooth, almost naked*.

Leaves mostly radical, *linear*, 2-celled, not in the least cut, all under water, bent back, about 2 inches long. Flowers racemed, about 9, in a loose spike above the water—blossom pale blue, a little drooping, slit down on the upper side, limb of 5 irregular spreading segments, a little bearded at the base—fruit erect. August.

GENUS XIX. HONEYSUCKLE OR WOODBINE, *Lonicera*. Blossom irregular, 2-lipped—berries distinct, 3-celled, many seeded.

Species I. *Common Honeysuckle*, L. *Periclymenum*. Woods and hedges, frequent. July. Stems several feet long, trailing over bushes, and twining round the boughs of trees. Leaves *all* distinct, ovate, not in the least cut, slightly downy. Flowers ringent; in heads, tiled, red on the outside, yellowish inside, upper lip of the blossom 3-cut, lower 2-cut, exceedingly sweet, especially in the evening—calyx 5-toothed. The English call this plant Woodbine. The distilled water of the flowers is esteemed by many as an excellent cosmetic.

GENUS XX. SHEEP'S SCABIOUS, *Jasione*. Blossoms wheel-shaped, 5-cleft—anthers grown together at the bottom into a tube—stigma club-shaped, nicked—seed-vessel 2-3-celled opening at the tip by a pore—(This bears a great resemblance to the compound flowers in the 19 class.)

Species I. *Sheep's Scabious*, J. Montana. Sandy pastures, frequent. June, July. About Chatelherault, on the Mount, sandy brae opposite Cadzow Castle &c. Stems many, round, somewhat rigid, beset with rough short hairs, from 6—12 inches high, slightly branched, striated, green, often tinged with purple. Leaves linear-lanceolate, slender at bottom, hispid, waved, crisp, the root ones large. Flowers bright blue, in terminal dense hemispherical heads, with a many leaved involucre. In general appearance it so resembles a scabious, as to be taken for one by unskilful botanists. The whole plant is milky.

3. The 5 following genera have flowers with 5 petals. The blossom in the 3 first is placed below the germen, in the remaining 2, above it.

GENUS XXI. SPINDLE TREE, *Euonymus*. Calyx 4 or 5, flat with a peltate disk—stamens 4 or 5, placed on glands, prominent above the calyx disk—seed-vessel, 5-angled, 5-celled, 5-valved—seeds covered with a coloured aurillus.

Species I. *Spindle Tree*, E. Europaeus. At Cadzow Castle. 3, 5, or even 20 feet high, when planted single and properly trained. Branches smooth, green, when young 4-angled. Leaves opposite, smooth, lanceolate, serrated, on *leaf-stalks*. Flower stalks axillary, forked—*compressed*, many

flowered—flowers in panicked clusters, white, foetid—stamens mostly *four*—stigmas awl-shaped—seed-vessel 5-angled, purple, seed white, aurillus yellow. May, and June. Branches used for Butcher's skewers and toothpicks; also by musical instrument makers, and watch makers for cleaning watches. The berries vomit and purge violently.

GENUS XXII. BALSAM, *Impatiens*. Calyx 2-leaved, very small—blossom 5-petalled, irregular, with a cowed nectary—anthers united—seed vessel oblong, 5-celled, 5-valved, many seeded.

Species I. *Yellow Balsam*, I. Noli-me-tangere. Abundant in a wet glen at Castlemilk. July, August. Herb juicy, pale, pellucid, smooth, much branched—joints of the stem, *swelled*. Leaves *ovate*, obtusely *serrate*, *petiolate*. Flowerstalks axillary, 3—4 flowered, *solitary*—flowers yellow, dotted with red, or orange—spur turned back at the tip—calyx of 2 yellow green leaves. The whole plant is rather acrid. It has received the name Noli-me tangere or touch me not, from the elastic force with which the seed is thrown out upon any thing touching the seedvessel.

GENUS XXIII. VIOLET, *Viola*. Calyx 5-parted, lower lobe produced at bottom—*petals* five, upper largest, spurred at the

base—anthers slightly joined together, membranous at the tip. The first 3 species have the stigma acute, bent back at the tip—the other 2 have the stigmas large, perforated or funnelshaped.

Species I. *Sweet-scented Violet*, V. *Odorata*. Shady places and by the roots of hedges, March, and April. Old wall at Barncluith bridge, root of a hedge at Claud's Burn &c. Root woody. No *stem*. Shoots long, rooting, leafy. Leaves heartshaped, on long leafstalks, *smooth*, very slightly downy beneath. Flowers purple, fragrant, on a peduncle 2—4 inches high, bearing above the middle a pair of lanceolate bractes—calyx obtuse—seedvessel oblong. The syrup of this plant is useful in chemistry, to detect an acid, or an alkali; the former changing a blue colour into a red, and the latter to green.

Species II. *Marsh Violet*, V. *Palustris*. In moist meadows and bogs, April and May. Between the Hamilton road and the village of Chapelton &c. Root creeping. No *stem*. Leaves *kidneyshaped*, *smooth* on both sides, crenate, *ribbed* and sometimes purplish beneath, often very small, but increasing much in size and height after flowering. Flowers solitary, drooping, inodorous, very pale blue, beautifully marked

with numerous branched streaks—spur very *short*, obtuse—calyx *blunt*.

Species III. *Dog's Violet*, V. *Canina*. Abundant in woods and hedges from April to June. Root woody. Stem when young awanting, at full growth ascending, long, nearly 3-sided, rather weak, grooved, branched. Leaves heartshaped, acute, nearly smooth, crenate, on leafstalks. Flowerstalks axiliary, solitary, erect, square, bearing two *awlshaped* bractees in the upper part, and one nodding blue flower—calyx *acute*. An extremely common plant.

Species IV. *Pansy Violet or Heart's Ease*, V. *Tricolor*. Common in fields and way sides from May to September. Road side half way between Millheugh Village and Stonhouse, fields by the Clyde at Ross, entrance to Bothwell haugh &c. Stems *angular, branched*, diffuse, leaved, *downy*. Leaves alternate petioled, rarely slightly downy on the edges. Flowers axiliary, single, inodorous—peduncles very long—petals purple and yellow (but varying much) reverse heart shaped, *twice* as long as the calyx. A favourite flower with many names, such as, Love in idleness, Call me to you, Kiss me behind the garden gate, Three faces in a hood &c. &c.

Species V. *Yellow Violet*, V. *Lutea*. Mountainous pastures from May to Sep-

tember. Middlefield Law Avondale, Cathkin hills &c. Stem 3-sided, simple, upright, weak at bottom, 3—5 inches high. Leaves *ovate-oblong, crenate, ciliate*—stipules deeply lobed, palmate. Flowers 2 or 3, seldom more, on long axillary peduncles from the upper leaves—petals longer than the calyx, yellow, streaked with black at the bottom, sometimes blue. Much resembling the former species.

GENUS XXIV. CURRANT, *Ribes*. Calyx 5-cleft, bearing the petals and stamens—style 2-cut—stigmas 2—berry globose, 1-celled, many seeded. The gooseberry and currant of the gardens.

Species I. *Common Currant*, *R. Rubrum*. Avon banks opposite Barncluith, perfectly wild, and in woods and by sides of rivers. May. Stem upright, *without* thorns. Leaves bluntly 5-lobed, slightly downy, doubly serrated, on longish leaf-stalks; a small scale or bractea at the base of each pedicel. Flowers *flat*, greenish, in simple, smooth, pendulous racemes—petals blunt, reverse heart shaped—berry red, when cultivated sometimes white. The red and white currant bush of our gardens. The juice is a pleasant acid among punch; and, mixed with sugar, is a common beverage at Paris, where it is generally preferred to Orgeate or Lemonade.

Species II. *Mountain Currant*, *R. Alpinum*. By the carriage way about Cadzow Castle abundant. May. A large bush, from 6—10 feet high. Stem upright, without prickles. Leaves 3-lobed, shining beneath. Flowers in upright racemes, yellowish green, *flat*—berries elliptic, red, mucilaginous, and insipid, or with a flat sweetish taste, agreeable only to children—bractees lanceolate, longer than the flowers.

Species III. *Black Currant*, *R. Nigrum*. Clyde between Merryton and Cunningar, and in woods, occasionally. Stem upright, unarmed. Leaves large 5-lobed, serrate, odorous, with glandular dots beneath. Flowers in pendulous, weak, *hairy*, racemes, simple at bottom—blossom bell shaped—berries large black—bractees shorter than the pedicels. May. The leaves, when young, tinge common spirits so as to resemble brandy. From the berries, Rob, Jelly, Wine &c. are made.

Species IV. *Gooseberry*, *R. Grossularia*. Woods and hedges common. April, May. Stem branchy—branches prickly—leaves roundly lobed—petioles hairy—peduncles 1 or 2 flowered—berries green, yellow, or red, hairy. The puckered, pitted, red spots occasionally observed on the green leaves of Gooseberry and Currant bushes, are produced by a little insect, the *Aphis Ribes*.

GENUS XXV. *Ivy*, *Hedera*. Calyx 5-toothed—petals broadest at the base—style simple—berry 5-seeded, crowned by the calyx.

Species I. *Common Ivy*, *H. Helix*. Rocks and trunks of trees. October, November. Stems long and creeping, adhering by numerous and short root-like processes to rocks, walls, and trees. Leaves dark green, shining, often veined with whitish lines, 5-angular, 5-lobed—uppermost *ovate*, swelled, upright. Flowers small, pale green, the petals reflexed—berries globular, purple black, nearly whitish. The roots are used by leather cutters to whet their knives upon. Country people apply the berries to issues to encrease the discharge. The gum has a smell, and attracts fish.

ORDER II. DIGYNIA, *Two styles* in each flower, along with the 5 stamens.

GENUS XXVI. GENTIAN, *Gentiana*. Calyx bell-shaped 4 or 5 parted, permanent—blossom bell, or funnel-shaped, 1-petalled, tubular at the base, withering or falling off, destitute of nectiferous pores—seed-vessel 1-celled, 2-valved.

Species I. *Field Gentian*, *G. Campestris*. Pastures near Airdrie, Ardochrig, Kilbride, pastures at Wester house between Lesmahagow and Douglas, very abundant. Stems square, 3—9 inches high, rather branchy.

Leaves opposite, ovate-lanceolate, nerved, the edge cartilaginous and minutely serrated. Flowers large, pale purplish, on long flower-stalks, *four-cleft*, *bearded* at the throat—calyx *four lobed*, 2 outer lobes larger, oval, completely overlapping and concealing the other two. Linneus and Pallas say, that it has been used instead of hops, and as a medicine in common with many others of the same genus. Like the other species of *Gentian* it is extremely bitter.

GENUS XXVII. DODDER, *Cuscuta*. Calyx 4 or 5-cut—blossom bell-shaped, tube short, limb 4 or 5-cut—seed-vessel 2-celled, 2-seeded, cut round. Leafless parasitic plants, twining round lint, flax, furze &c.

Species I. *Greater Dodder*, *C. Europæa*. On flax at Cameron New Monkland, rare. August, September. Root at first adhering to the ground, but withering away as soon as the young stem has attached itself to another plant. Stem smooth slender, four cornered, reddish, twining about some other plant, contrary to the apparent motion of the sun, and adhering to it by means of little root-like vessicles or tubercles. No leaves, except here and there a small membranaceous scale, close under a branch. Flowers nearly *sessile*, transparent, reddish, or *pale pinkish*, clustered, with a small,

single, ovate acute scale under each ball of flowers—blossom cleft into 4 or 5 patent segments—*without* scales at the base of the stamens—stigmas pointed—seeds generally two in each cell. The fresh herb, bruised and applied externally, has been used for dispersing scrofulous tumours. The whole plant is bitter.

Species II: *Lesser Dodder*, *C. Epythymum*. On flax at Hamilton—but I have not seen it there myself. July, August. Smaller than the last. Stem twisted. Flowers sitting in balls, close set—blossom white or paler than the last species, *mostly* 4-cut, the segments sharper and smaller—calyx reddish—stamens with a notched nectariferous scale at the base of each. From its destructive nature in suffocating plants, it has received the opprobrious names of hell-weed, and devil's-guts. It is purgative, and like the former is supposed to partake, in some measure, of the virtues of the plants to which it grows.

GENUS XXVIII. GOOSE FOOT, *Chenopodium*. Calyx a perianth, single, inferior, 5-cleft, persistent, partly covering the seed, not enlarging after flowering—seed 1, roundish—no blossom.

Species I. *Good King Henry*, *C. Bonus Henrius*. Uncultivated places and road sides, occasionally. Bothwell Church Yard,

Millheugh &c. May—August. Stem 1 foot high or more, stout, branched below, striated, leafy, unctuous, powdery, somewhat crooked. Leaves large, dark green, very numerous, triangular, arrow-shaped, quite entire on leaf-stalks, powdery beneath. Flowers in compound, erect *axiliary* and terminal, leafless spikes—mealy. Gathered while young to eat as Spinach. The young shoots peeled and boiled may be eaten as Asparagus. The roots are given to sheep afflicted with coughs.

Species II. *Red Goose-foot*, C. Rubrum. Dunghills and under walls, frequent. August, September. By the wall near Clyde Bridge &c. Stem 1—2 feet high, stout, branched, smooth, grooved, becoming reddish as the seeds ripen. Leaves thick, shining, dark green, deeply *toothed and sinuated*, *rhomboid-triangular*, lengthened out at the base, but not truncate. Flowers in erect, very compound axillary and terminal, leafy racemes which are rather spreading, reddish, and shorter than the stem—seed very minute.

Species III. *White Goose-foot*, C. Album. Waste places, dunghills &c. common. Stem upright, much branched, slightly crooked, angular and striated, smooth sometimes streaked with purple. Leaves *egg-shaped*, inclining to rhomboid, jagged,

crowded, *not cut* at the bottom, the upper oblong, not cut, all of them covered with a mealy substance. Flowers in branched racemes, nearly leafless, forming a spike of flowers growing in little clusters—seeds very smooth. It flowers in July and August, is exceedingly common, occurring in almost every garden, dunghill, and corn-field. The name by which it is generally known is Mites or Meldweed. It is whiter than the above species.

GENUS XXIX. ELM, *Ulmus*. Perianth single, inferior, persistent, 4—5 cleft—seed-vessel membranous, compressed, 1-seeded.

Species I. *Common Elm*, *U. Campestris*. Woods and hedges, common. A tree growing to a great size, of which I give the specific character only. Leaves doubly serrated, scabrous, unequal at the base—flowers, nearly without flower-stalks, 4-cleft with 4 stamens—fruit oblong, naked.

Species II. *Broad-leaved or Whych Elm*, *U. Montana*. Woods and hedges, common, Woodhall &c. Leaves doubly serrated, pointed, rough, unequal at the base—flowers on short flower-stalks, 4 or 6 cleft, with 5 or 6 stamens—fruit roundish, naked. Elm is a tough and strong timber. It is well adapted for water works, such as mills, pipes, pumps &c. An ancient statute,

among other kinds of wood, enjoins the
 whych-hazel or elm for the making of bows.

4. The following are Umbellate Plants, so termed from their particular manner of growth, which differs materially from most others. Hemlock, Carrots, Parsneps, Celery &c. will furnish an example. From a straight stem generally hollow and pithy, furnished with alternate leaves, proceed smaller stems, spreading like rays from a centre, in form of the ribs of an Umbrella, when turned inside out, which gives them the name of Umbellate. Each of the stems or rays, which form these rundles or umbels, as they are called, are frequently crowned by a rundlet, or smaller set of rays, terminated by the flowers. The base of each circle of stems is sometimes surrounded with small leaves, called an involucre or fence, which is termed general when it encloses the whole rundlet, and partial if found at the base of the lesser rays—many kinds have no fence. The flowers have a calyx scarcely discernible; a blossom that grows upon the seed bud, formed of five petals, which are generally heart-shaped and bent inwards; fruit naked, composed of two seeds growing together. The first 9 genera have Umbels with a partial and universal involucre; the 7 genera which follow, have Umbels with a partial involucre—general none; and the last 4 genera have Umbels without involucre, rarely general, never partial ones.

GENUS XXX. PENNYWORT, *Hydrocotyle*.
 Umbel imperfect, forming a head of flowers—petals entire, equal—no calyx—involucre 2 or 4-leaved—fruit roundish, compressed sideways, veined. Leaves roundish, like a penny.

Species I. *Marsh Pennywort*, *H. Vulgaris*. Bogs and watery places, common. June. Stems thread-shaped, very creeping, round, smooth, striking root at the joints,

GENUS XXXII. HEDGE PARSLEY, *Caucalis* now *Torilis*. Involucres undivided, general involucre 1—5 leaved, partial 5—8 leaved—blossoms radiated, with stamens only in the disk—fruit ovate, ribbed, covered with bristles and prickles, prickles rough, distinct.

Species I. *Upright Hedge-parsley*, C. or T. *Anthriscus*. Hedges and roadsides, common. August. Roadside between Hamilton and Motherwell, abundant. Stem 2—3 feet high, erect with erect branches, round, purplish, rough, covered with minute white rigid bristles or hairs, hairs deflexed. Leaves *bipinnate*, leaflets *ovate-lanceolate*, deeply serrated, scabrous—leaf-stalks channelled—outmost leaflet linear, lanceolate. Umbels terminal, many cut, crowded, the rays scabrous—partial umbels dense, flat. Flowers small reddish, petals reverse heart-shaped, 2-lobed, strigose—involucres of several small awl-shaped leaves—fruit small, ovate, very rough and bristly, violet at the tip. Withering says horses are fond of it.

GENUS XXXIII. CARROT, *Daucus*. Involucre many leaved, leaflets pinnatifid—fruit muricated *i. e.* thorny.

Species I. *Wild Carrot*, D. *Carrota*. Road sides and borders of fields, common. July. Road side between Raith and the Roman Bridge; between Hamilton Bridge

and Motherwell; entrance into the Camp Bleachfield; at Scotstown and Rosebank Rutherglen &c. Root slender white or brownish, smelling like the carrot. Stem 12—18 inches high, *bristly*, grooved, branched, branches alternate. Leaves 2-3 *pinnate*, leaflets cut, linear lanceolate, acute, slender, dark green, hairy—petioles *ribbed* or nerved underneath. Umbels flat while in flower, in fruit *concave* or hollow like a bird's nest—flowers white or reddish, those in the middle, fertile, but those in the circumference (irregular and larger than the others) are frequently either neuter, or have pistils only—general involucre deeply pinnatifid, linear, partial ones often 3-cleft—fruit bristly. The origin of the garden Carrot. An infusion of the seeds is useful in gravelly complaints. Moles are so fond of the roots, that carrots are a proper bait to ensnare them with. It is also used for destroying crickets, being made into a paste with powdered arsenick and flour.

GENUS XXXIV. EARTHNUT, *Bunium*. Involucres, 3 or many-leaved rarely wanting, partial involucres setaceous—fruit linear elliptical, 5-ribbed, ribs streaked or folded with a narrow edge on each side.

Species I. *Common Earth-nut*, *B. Bulbocastanum*. Sandy fields and pastures, abundant. May, June. Barncluith green &c.

Root a roundish nut or tuber of a sweetish taste, lying deep in the earth—here called Arnuts. Stem about 1 foot high, white and flexuose beneath the ground, but afterwards upright, round, stiffish, smooth, slightly striated, branched, of a green colour. Leaves *tripinnate, linear, glabrous*, root ones on leaf-stalks, stem ones nearly sessile, with a short, smooth, grooved sheath, the edge membranous and whitish. Umbels terminal, general 7—12, partial umbel about 12 rays—flowers white, petals obcordate—general 1—3-leaved rarely wanting—styles white—seeds ovate. The knobbed roots when roasted are little inferior to Chesnuts. In this part of the country it is called Arnut, probably from the Dutch name of the herb *aardnoot*.

GENUS XXXV. HEMLOCK, *Conium*. Partial involucre 3-leaved, all on one side—petals nearly equal—fruit nearly globose, with 5 wavy streaks on each side.

Species I. *Common Hemlock*, *C. Maculatum*. Waste places, banks &c. not very common, June, July. At Raploch; Bothwell Castle; Haugh near Covantburn Bridge, now nearly extirpated, embankment above Ross Wood &c. Stem 2—4 feet high, *much branched* at top, smooth polished, covered with a bluish powder which is easily wiped off, spotted and streaked with livid

purple. Leaves much divided in a pinnated manner, leaflets ovate lanceolate, shining, smooth of a strong odour—petioles or leaf-stalks smooth, round, spotted—sheath grooved. Umbels many rayed, greater 10 or 12, lesser 15 or 16—blossom white, outer petals largest—partial involucre, few-leaved, setaceous, directed to one side—fruit ovate, 5-ribbed, 3 on the back, and 2 on the side. Highly narcotic and poisonous. The leaves in powder used in cancer, chronic rheumatism, and obstinate ulcers. *Chærophyllum Temulentum*, having a spotted stalk, is often mistaken for this plant, even by Medical men. By the common people nearly all the Umbellate plants are called hemlock.

GENUS XXXVI. COW PARSNEP, *Heraclium*. Involucres deciduous *i. e.* falling off—flowers radiated—petals unequally 2-cut—fruit compressed, reverse ovate, elliptical, striated. Meadows and borders of fields, abundant. July. Plantation at Hamilton Bridge &c. A coarse rank plant 4—5 feet high, with erect, rough, furrowed, angular branched stems. Leaves hairy, scabrous, *pinnate*, leaflets broad, somewhat pinnated, cut, serrated, the terminal one 3-lobed, and somewhat acute—frequently about a foot in length, and more than half that in breadth—petioles dilated at bottom—sheath inflated. Universal umbel large, flat, has 10, 12

or more rays, the partial umbel has upwards of 30—florets white, greenish white or purplish—they have a horned appearance before they expand, particularly the outer ones, which are four times the size of the inner petals—the central florets are frequently abortive. Fruit large, flat, 3-ribbed on each side, smelling somewhat like a bug. These when brewed form a sort of ale which is drunk in Poland and Lithuania. The young shoots are a very good Asparagus.

GENUS XXXVII. LOVAGE, *Ligusticum*. Involucre various membranaceous, leaves cut—calyx scaly, toothed—petals nearly equal, ovate, keeled—fruit ovate oblong 5-ribbed, ribs sharp, nearly winged.

Species I. *Spignel, Meu, or Bald-money*. *L. Meum*. Rare, near Plowland, Avondale. Kitchside and Crosshill in Kilbride, on Cathkin hills. May. Root thick, aromatic, fibrous at the tip. Stem scarcely branched, rather naked. Leaves long, dark green, 2 or tripinnate, leaflets bristle-like, many cut, lobes smooth, very slender—stipules dilated. Umbels many-rayed—flowers, yellowish—fruit oblong furrowed—partial involucre many leaved, halved, cut or whole—general involucre few leaved, leaves cut, or wanting. Remarkable for its many-clefted, long, bristle-shaped, dark green leaflets.

GENUS XXXVIII. ANGELICA, *Angelica*.
General involucre sometimes wanting,—
fruit reverse-ovate, 4-angular, winged, end-
ing with the reflected styles.

Species I. *Wild Angelica*, A. Sylvestris.
Common in moist woods and watery places.
July. Plantation below Hamilton Bridge,
Deadwaters Ross &c. Stem 2—4 feet high,
smooth, branched, purplish, covered up-
wards with a fine glaucous powdery sub-
stance, easily wiped off. Leaves bipinnate
—leaflets ovate, equal, cut, *acutely* serrated,
sometimes lobed at the base, widely spread-
ing, rather glaucous. Umbels large convex
or hemispherical, on pubescent stalks—
flowers pinkish white, with equal, ovate
petals—calyx 5-toothed, scarcely discerni-
ble—general involucre of about 2 linear
leaves, partial one of many bristle-like leaves
—fruit small, roundish, with 3 winged ribs.
Hollow stem used by boys for squirting
water and for roans. It yields a good yellow
dye.

Umbels with partial involucre only.

GENUS XXXIX. WATER HEMLOCK,
Cicuta. Fruit ovate, with 5-ribs, the inter-
mediate spaces prominent, the whole ap-
pearing furrowed.

Species I. *Water Hemlock or Cow-bane*,
C. Virosa. About the sides of Lochs &c.
not common. July, August. Stem round,

hollow furrowed, 3—4 feet high, light green lower part divided transversely into many large unequal cells. Leaves 3-pinnate leaflets, *smooth, lanceolate, serrate*, serrature white at the tip. Umbels opposite to the leaves, many-rayed, convex—flower white, with small much inflexed petals—anthers white or reddish purple—calyx 5 toothed—partial involucre of many small acute leaves—fruit compressed, roundish ribbed. A deadly poison. Strong emetics succeeded by vegetable acids or oils, are best for counteracting it.

GENUS XL. FOOL'S PARSLEY, *Æthusa*. Partial involucre all on one side consisting of very long pendulous leaflets—fruit ovate with 5 acute ribs.

Species I. *Fool's Parsley*, *Æ. Cynapium*. Not very common. Gardens and fields July, August. About Jerviston, old wall at Barncluith Bridge &c. Stem about 1 foot high, slightly branched, smooth, striated often purplish, but not spotted. Leaves bipinnate—leaflets pinnatifid, smooth, dark green. Umbels terminal or opposite to leaves, on long stalks—flowers white, petals unequal, nicked, 2-lobed, with a hollow on each side. The three long pendulous leaves of the partial involucre, all on one side distinguish this from every other umbellate plant. When eaten in mistake for parsley

it occasions vomiting, which may be stopped by a large doze of brandy.

GENUS XLI. NEEDLE CHERVIL, *Scandix*. Partial involucre jagged—fruit oblong, 5-ribbed, terminated with a very long rough beak.

Species I. *Needle Chervil*, *S. Pecten Veneris*. Common in corn fields. June, July. On the farms of Allington and Merryton &c. Stem nearly a foot high, spreading, branched, furrowed, *rough*. Leaves bipinnate—leaflets finely cut into many linear segments, smooth, dark green. Umbels terminal 2 or 3-rayed—flowers small, white, petals nearly equal, reverse ovate—fruit oblong, rough, with a long angular beak 1—2 inches long—partial involucre cut. It may be easily known by its fine cut leaves, its angular, large, cut involucre, and particularly by the long beaks to the seeds. It is also called Venus's Comb, and Shepherd's Needle.

GENUS XLII. ANTHRISCUS, *Anthriscus*. Partial involucre 3-5-leaved—calyx wanting—fruit ovate, hispid, with a short glabrous beak.

Species I. *Common Anthriscus*, *A. Vulgaris*. About Dalserf &c. May, June. Stem smooth, shining, striated, rather weak, much branched and spreading, swelling under each joint, 2 feet or more high. Leaves

tripinnate, light green, petiolate, soft and tender, hairy (prickly, prickles hooked) especially underneath, and along the midrib of a yellowish green colour—leaflets ovate, lobed. Umbels lateral and terminal (mostly lateral) 4 or 5 rayed—partial ones small with from 3—5 small ovate involucre—flowers small, white, petals flat, reverse ovate, reverse heart-shaped—fruit rough with hooked bristles, ovate, with a smooth beak, half its length, which has a line down the middle. Whole plant of a pale green, and weak delicate habit—poisonous.

GENUS XLIII. COW PARSLEY, *Chaerophyllum*. Partial involucre of about 5, reflected concave leaves—fruit oblong-conical, smooth, even, ribless.

Species I. *Rough Cow Parsley*, Ch; Temulentum. Common in hedges. June, July. Hedges between Hamilton and Old Avon Bridge &c. Stem about 3 feet high, *rough* with hairs, round, branched, solid, striated, generally *spotted* with purple, *swelling* below each joint, hispid especially below. Leaves bipinnate, hirsute, the leaflets ovate, lobed, blunt, hairy on both sides. Umbels drooping until they flower, of many rays clothed with bristly hairs—flowers white, petals nearly equal, reverse heart shaped, 2-lobed—fruit oblong, smooth, striated. *This herb is often mistaken for hemlock.*

Species II. *Smooth Cow Parsley*, Ch ; Sylvestre. Common, in fields and hedges. May, June. Haugh-head ; Bothwell Castle &c. Root milky. Stem 3 feet or so high, branched, furrowed, *glabrous*, a little swelling below each joint (joints turned,) hollow, generally purplish, villose, the branches less in the upper leaves, rough at the margin. Umbels at first a little drooping, on *long stalks*—flowers whitish, at first yellowish white, petals flat, abortive—fruit ovate oblong, smooth, glossy, beaked, beaks with 5 *blunt* ribs—the partial involucre are fringed. This plant indicates a frightful soil. The Umbels dye yellow, and the plant itself a beautiful green.

Species III. *Garden Cow Parsley or Chervil*, Ch ; Sativum. About hedges and gardens. July. Rubbish about Barncluith. Stem 1—2 feet high, smooth, branchy, slender. Leaves pale yellow green, bipinnate, leaflets ovate, cut, smooth, shining, of an exceedingly delicate texture. Umbels 4 or 5 rayed *lateral sessile*, partial umbels small, with few involucre, which are all on one side—fruit large, smooth, beaked, ribs of the beak *acute*. An herb, highly aromatic, used in salads, and in soups, especially by the Dutch.

GENUS XLIV. CICELY, *Myrrhis*. No involucre—fruit oblong, beaked at the apex,

beak 1—4-th its length, crowned with the styles, 5-ribbed.

Species I. *Sweet Cicely*, *M. Odorata*. Frequent in pastures. May. Bank below the old house of Jerviston; by the wall, brae park Silvertonhill; above the New Mill Dam; burnside near Whistleberry, and below Chantonhall; Barncluithgreen &c. Plant highly aromatic. Stem about 2 feet high, streaked or furrowed, stout, branched, hairy and fistulous. Leaves large tripinnate, pale green, sessile, hoary with pubescence—leaflets ovate, lanceolate, serrate—the whole branching somewhat like the fern. Umbels terminal, many rayed, large—flowers white, rather crowded, with a sweet aromatic scent—fruit *large*, linear-oblong, with prominent somewhat winged ribs—the seeds have the taste and scent of Anise. Used in soups by the Germans, and in the N. of England, the seeds are employed to polish and scent floors and furniture.

GENUS XLV. MASTERWORT, *Imperatoria*. No involucre, fruit nearly elliptical, compressed, with a winged border, 2-cut at top and bottom; swelling in the middle with 3 ribs on each side, ribs sharp, not winged.

Species I. *Masterwort*, *I. Ostruthium*. Rare. On an old wall at Langland-house, and waste ground near Jackton, Kilbride.

June. Root tuberous, acrid, acrimonious, biting the tongue and mouth. Stem or flower-stalk 12—18 inches high, *simple* or slightly branched, erect, smooth, striated. Leaves in threes—leaflets (3 lobed) ovate-lanceolate, unequally serrated—from the root, on deeply channelled foot-stalks, 6 or 7 inches long, which when broken emit a rank odour. Umbels large, terminal, dense, flat, compressed, very few, many-rayed—flowers white or pinkish, petals elliptical, split, equal—calyx wanting—partial involucre very slender, with 1 or 2 setaceous leaflets, almost the length of the umbel—fruit smooth, ribbed, with a broad dilated border. Root, warm, aromatic, used in rheumatic tooth-ache; recommended internally in dropsy and dyspepsia; an infusion in wine used successfully in quantian agues when bark has failed.

Umbels having neither general nor partial involucre.

GENUS XLVI. CARAWAY, *Carum*. Involucre often with one leaf—calyx scarcely manifest—petals somewhat equal, reverse heart-shaped, keeled, inflex-emiarginate—fruit ovate-oblong, striated.

Species 1. *Common Caraway*, *C. Carui*. Rare, in fields and pastures. June. Dalbeth haugh. Glenhove Newmonkland, abundant. Stem 1—2 feet high, branched, furrowed, glabrous. Leaves bipinnate,

smooth—leaflets crossed, lobes sessile, segments narrow, linear lanceolate—Umbels terminal, erect, many rayed—flowers white or pinkish—petals nearly equal, reverse-heartshaped, nicked, keeled, concave, small, ovate-elliptic, ribbed, with 3 streaks in the depressions between the ribs; middle streak exserted, keeled. The seeds are much used in cakes, and incrustated with sugar for comfits; they are of an agreeable aromatic smell, and a warm pungent taste. They were formerly recommended by Dioscorides for pale-faced girls.

GENUS XLVII. BURNET SAXIFRAGE, *Pimpinella*. No involucre—petals bent in—stigma somewhat globular—fruit ovate, oblong, glabrous, 5-ribbed.

Species I. *Burnet Saxifrage*, *P. Saxifraga*. Frequent, in dry pastures. July, August. Pastures near Kitchside, road side between Herblas and Dalziel, on the Camp bleachfield abundant. Root highly aromatic and pungent. Stem 10—12 inches high, erect, slender, rigid, round, striated, and roughish, varying much in luxuriance, generally branched above. Leaves—root ones pinnate, leaflets roundish, acutely toothed—those of the stem bipinnate, linear. Umbels drooping at first, terminal, flatish, many-rayed, on long peduncles—flowers, *small*, white, nearly equal—stamens long—

fruit, small, ovate, ribbed. The roots are powerfully diuretic, and have been employed by the Germans for the Dropsy and Asthma: they afford a blue oil.

GENUS XLVIII. PARSLEY, *Apium*. Petals uniform, fruit roundish ribbed—involucre 1-leaved, partial one many-leaved.

Species I. *Common Parsley*, *A. Petroselinum*. Old walls and rock at Bothwell Castle. July. Stems round, smooth, striated. Leaves shining—radical, leaflets broad and lobed, those of the stem leaves *linear*. Umbels all *pedunculate*—flowers pale yellow, small, petals equal—seeds short, turgid. It is a biennial plant, cultivated for culinary uses.

GENUS XLIX. GOUTWEED, *Ægopodium*. Petals unequal—stigmas simple—fruit ovate-oblong, ribbed.

Species I. *Common Gout or Bishop's-weed*. *Æg*; *Podagraria*. Too common in fields and Gardens. June. Hedge roots at Ross Bridge &c. Stems erect, 1—3 feet high, furrowed, slightly branched. Radical leaves twice ternate, superior ones ternate—leaflets ovate, somewhat acuminate, unequally serrated. Umbels erect, terminal, many-rayed, flat—flowers white, petals equal, reverse-ovate, cut—each seed 3-ribbed. The roots are creeping and difficult to be extirpated. The leaves small like

those of Angelica, and may be eaten in early spring salads. Formerly used by the Germans as a cure for Gout and Sciatica. The umbellate plants growing in sandy soils, are generally aromatic and carminative—but in wet damp soils, poisonous.

ORDER III. TRIGYNIA, three styles in each flower along with the 5 stamens.

GENUS L. GUELDER-ROSE, *Viburnum*. Calyx small, 5-cut—blossom bell-shaped, 5-lobed, the filaments inserted into its base—berry naked, 1-seeded, seed compressed.

Species I. *Guelder-rose*, or *Water Elder*, V. Opulus. Frequent in damp woods and hedges. June. Stonebyre wood; Back-planting near Bothwell Bridge; British-home; Polleskin glen, and Gilburnsynk, Kilbride; Jerviston woods &c. abundant. A small bushy tree, smooth in all its parts. Stems many from the same root, spreading upwards, much branched—branches opposite, round. Leaves large, broad, *glabrous*, 3-lobed, *sharply* toothed, opposite, rather paler beneath, fine red in decay—leaf-stalks leafy at bottom, glandular at the tip. Cymes of flowers terminating, solitary, erect, large, flat, consisting of many white flowers of two sizes—the inner small, perfect, resembling those of Elder, those in the margin abortive, consisting merely of a large, irregular, flat, 5-cleft petal, without either stamens or

pistils ; berries bright red, ripening about September. Toward the middle of October the leaves assume a beautiful red, or pink colour.

GENUS LI. ELDER, *Sambucus*. Calyx small 5-cut—blossom wheel-shaped 5-lobed—berry globose, inferior, 1-celled, 3-seeded.

Species I. *Dwarf Elder*, *S. Ebulus*. Occasionally, in hedges, and in uncultivated places. July. On the roadside between Kittochside and Carmunnock ; in a hedge near Clyde Iron works &c. A plant seldom exceeding 3 feet high. Stems *herbaceous*, simple, upright, angular and furrowed. Leaves pinnate, dark green, serrated—leaflets *lanceolate* equal at the base, glandular, veiny, 3 or 4 pair ; stipules petioled, leaf-like, ovate. Cymes of flowers 3 or 5-parted, large, terminal, dense, the branches pilose—flowers numerous, pedicellate, purplish—stamens upright, thick—berries globular, purple black. One drachm and a half of the root, is a strong purgative : the juice is said to turn light coloured hair black. The leaves laid in granaries drive away mice.

Species II. *Common Elder*, *S. Nigra*. Common in woods and hedges. June. About Dalserf, abundant. A bushy tree, twelve or sixteen feet in height. Stem *arborescent*, much branched—branches full

of light pith. Leaves dull green, pinnate—leaflets ovate, serrated, smooth, mostly five. Cymes of flowers 5 or 7-parted, terminal, large, flat—flowers cream coloured, numerous, strong scented—stamens spreading—berries globose, blood-purple. This tree is as it were a whole magazine of physic to rustic practitioners, nor is it quite neglected by more regular ones. The inner bark and the leaves are purgative; the flowers are directed in the London Pharmacopœa in form of an ointment; the berries are laxative and diaphoretic, fatal to all poultry, but in the hands of the country housewife they make a safe and an excellent domestic wine.

ORDER IV. TETRAGYNIA, four styles in each flower along with the five stamens.

GENUS LII. GRASS OF PARNASSUS, *Parnassia*. Petals 5—nectaries five, each a heart-shaped, concave scale, with 13 rays disposed along the margin, gradually taller, terminated by a little knob or globule—seed-vessel 1-celled, 4-valved.

Species I. *Grass of Parnassus*, *P. Palustris*. Rare, in bogs and marshy pastures. Root small, whitish, putting forth several stems. Stem 8 or 10 inches high, erect, unbranched, somewhat twisted, five cornered, slender, smooth, bearing only a single embracing leaf below the middle. Leaves *mostly* radical, on long foot-stalks, cordate,

entire, nerved, the one on the stem, sessile. Flowers solitary, terminal, large (about an inch wide,) singularly elegant, yellowish white—petals a little scalloped at the edges, slightly emarginate, with semitransparent greyish veins. Nectaries beautiful, alternate with the stamens, fringed with filaments tipped with yellow pellucid globules. Capsule ovate, stigma sessile.

ORDER V. PENTAGYNIA, five styles in each flower along with the stamens.

GENUS LIII. FLAX, *Linum*. Calyx 5-leaved—petals 5—seed-vessel 10-valved, 10-celled—seed, solitary.

Species I. *Common Flax*, L. *Usitatissimum*. Occasionally in cornfields. July. Stem mostly *simple*, upright, simple at bottom, paniced at top. Leaves lanceolate, alternate, distinct, glabrous, 3-nerved, entire. Flowers on stalks, large, erect—petals reverse ovate, light blue, streaked—leaves of the calyx, acute, 3-ribbed, pointed. Linseed oil is procured from the seeds, and the stems furnish us with flax.

Species II. *Purging Flax*, L. *Catharticum*. Frequent, in dry pastures. June, July. Field behind the office houses at Jerviston; Riccarton park &c. Stem 2—6 inches high, upright, leafy, simple at bottom, forked above, several from the same base, many-flowered. Leaves *opposite*, reverse

ovate, lanceolate. Flowers terminating, solitary, pendulous before they open, then erect—petals white, *acute*,—calyx leaves 1-ribbed, serrated—stigmas headed. The dried plant infused in wine is purgative; it is also useful in rheumatism.

ORDER VI. HEXAGYNIA, six styles in each flower along with the 5 stamens.

GENUS LIV. SUN-DEW, *Drosera*. Calyx 5-cut—petals 5—seed-vessel 3 or 5 valved.

Species I. *Round-leaved Sun-dew*, *D. Rotundifolia*. In turf bogs. July, August. Moors New Monkland, Kilbride &c. Flower-stalk or scape erect, round, slender, simple, 3 or 4 inches in height, bearing a *simple* raceme. Leaves *radical*, *orbicular*, spreading, upon rather *short* red foot-stalks, forming a tuft, set with red hairs about the edge and on the upper surface, the under surface smooth—hairs tipped with a very glutinous pellucid globule. Flowers in a kind of racemed spike, bent in at the top before flowering, pointing one way, alternate, erect, from 6—11 in number, small, whitish—calyx smooth—stigmas obtuse, white—bractees none. The flowers open from nine to twelve. The herb is acrid, and sufficiently caustic to corrode the skin. The unmixed juice destroys warts and corns; it also coagulates milk.

CLASS VI.

SIX STAMENS ALL OF EQUAL LENGTH, HEX-
ANDRIA. THE FIRST ORDER IS MONOGY-
NIA, ONE PISTIL IN EACH FLOWER ALONG
WITH THE SIX STAMENS.

1. *Flowers with both Calyx and Corolla.*

GENUS I. BERBERRY, *Berberis*. Calyx
of six leaves—blossom of six petals—berry
2-seeded.

Species I. *Berberry-bush*, *B. Vulgaris*.
About Lanark; Clyde below Hamilton
Bridge; Barmichael wood near Bothwell
Bridge is entirely covered with it. A Shrub
8 or 10 feet high. Stems mostly upright,
branched, smooth, slightly grooved, with a
white pith, and covered with a pale or ash-
coloured bark—prickles 3-forked. Leaves
stalked, in bundles, *reverse-ovate*, fringed,
toothed, acid to the taste. Flowers in pen-
dulous racemes towards the ends of the
branches, petals yellow with two glands at
their base—stamens irritable, starting elas-
tically when gently touched—berries first
green, but when ripe changing to a fine red
colour. These are made into an agreeable
jelly, by boiling them with an equal weight

of fine sugar. It is supposed by some to cause wheat growing near it to become mildewed, but this is denied by Dehamel, Broussonet, and other scientific writers, and also by Mr Aiton and others who have written on agriculture.

GENUS II. PURSLANE, *Peplis*. Calyx bell-shaped, 12-toothed, teeth alternately shorter—petals 6, often wanting—seed-vessel globular, 2-celled, not opening, many seeded.

Species I. *Water Purslane*, *P. Portula*. Occasionally, in bogs and damp heaths. July, August. Wrangham loch Holytown; marshy places at Boghead; by the lochs on the borders of Old Monkland Parish &c. Stems numerous, from 3—6 inches long, prostrate, branched, forked, slender, angular, jointed, rooting at the joints, of a reddish colour, sometimes floating. Leaves stalked, opposite, *reverse egg-shaped*, glabrous, small, tapering at the base. Flowers axillary, solitary, sessile, reddish, or greenish red, mostly without petals. Generally a small insignificant plant, growing especially where water has stagnated in winter and become dry in summer.

2. *Flowers issuing from a sheath or Spatha.*

GENUS III. SNOW-DROP, *Galanthus*. Perianth (the blossom) of 6 leaves, the 3 *inner ones* shorter, emarginate, obtuse.

Species I. *White Snow-drop*, G. Nivalis. Banks about Castlemilk, and occasionally about gentlemen's houses. February. Root bulbous. Scape or flower-stem, 4—8 inches high, two-edged, striated, 1-flowered. Leaves 2 in number, radical, glaucous, keeled, yellowish at the base, calous at the tip, sheathing the stem. Flower 1, stalked, drooping, white, tipped with green, the inner segments with greenish lines, usually bursting from the left cell of the sheath or spatha. One of the first flowers that appears, as a harbinger of summer.

GENUS IV. GARLIC, *Allium*. Perianth (the blossom) of six leaves, all ovate, sessile. (Flowers umbellate.)

Species I. *Broad-leaved Garlic or Ramsons*, A. Ursinum. Frequent, in woods and by the sides of streams. June. Mauchlanhole Kilbride; banks of Barncluith burn &c. abundant. Root a slender oblong coated bulb. Scape or flower-stem about a foot high, 3-sided, upright, weak, smooth. Leaves all from the root, large, flat, acute, ribbed, ovate-lanceolate, on foot-stalks which sheath at the base. Flowers umbelled, lax, terminal, white, springing out of a 2-leaved, lanceolate, membranaceous spatha or sheath which is deflected and shorter than the peduncles—the umbels are many-rayed, without bulbs. Readily recognized when

bruised by its remarkably rank garlic smell. Cows eat it so plentifully in the beginning of summer, that the milk partakes of the taste and smell of garlic.

Species III. *Crow Garlic*, A. Vineale. Rare. In Daldowie woods. June. Root a small ovate bulb. Stem round, slender, 18 inches or, 2 feet high. Leaves few, round, smooth, hollow or *fistulose*. Flowers greenish flesh coloured, reddish green at the keel, in small umbels, densely crowded, and furnished with many little acute greenish bulbs—stamens exerted each with 3 filaments, 3-pointed, the centre one shortest, bearing an anther—spatha or sheath of two rather small leaves, deciduous, *i. e.* falling off. The flowers in this species are often wanting.

Species IV. *Chive Garlic or Scythes*, A. Chœnophrasum. Occasionally in the neighbourhood of gardens. July. Old quarry at Coalshill near Holytown. Leaves all from the root, round, awl-shaped, thread-like, alternated, 6 or 7 inches high, acute, glaucous, sheathing. Scapes in tufts, slightly curved, *as long* as the leaves. Flowers whitish purple, in crowded compact heads or umbels, which have no bulbs—*pistil* very long—spatha purplish, ovate, remaining—umbels bearing seed-vessels. Cultivated as a pot herb under the name of

Scythes, and used in the spring for salads, being milder than those Onions which have stood through the winter.

3. *Flowers with a blossom only—calyx and sheath wanting.*

GENUS V. TULIP, *Tulipa*. Perianth (or blossom) bell-shaped, 6-parted, lobes not nectiferous at bottom—stigmas sessile, thick—seed-vessel oblong, 3-sided.

Species I. *Wild Tulip*, T. *Sylvestris*. Field at Smiddycroft; Orchard at Orbiston; about Blantyre Priory, but in each of these places becoming annually scarcer. April. Stem solitary, upright, 12 inches high, leafy below the middle, 1-flowered, smooth, sometimes bent down before flowering. Leaves 3 or 4 glaucous, tubular and sheathing at the base. Flower yellow, sweet scented, solitary, drooping before it opens, then becoming upright—lobes of the blossom lanceolate, pointed, bearded at the tip—stamens hairy at the base, anthers and pollen yellow—stigma obtuse, 3-sided. This was formerly cultivated in gardens, but since the common garden tulip (*Tulipa Gesneriana*) has been introduced, it is fallen into disuse.

GENUS VI. STAR OF BETHLEHEM, *Ornithogalum*. Perianth (or blossom) 6 leaved—filaments of the stamens inserted on the base of the petals, those inserted on the 3.

outer dilated at bottom, the others thread-shaped, smooth.

Species I. *Common Star of Bethlehem*, O. Umbellatum. Border of a field at Barncluith; Mount at Chatelherault &c. Plant 8 or 10 inches high. Leaves linear, acuminate, grooved, shrivelled at the tip. Flowers white, with a broad green streak on the back of each of the segments, the margin and inner surface white—raceme inclining to corymbose, with from 6—9 flowers, the outer peduncles longer than the centre ones, so that their flowers are of the same height—bracteas long, membranaceous, acute, from the base of each peduncle—seed-vessel 3-sided, blunt. This plant, at first sight, bears no distant resemblance, to the snow-drop.

GENUS VII. HYACINTH, *Hyacinthus*. Perianth (or blossom) 6-cut, the segments bent back, closing at bottom into a tube—stamens uniform, filiform, inserted about the middle of the blossom—seed-vessel 6-sided.

Species I. *Wild Hyacinth or Hare-bell*, H. Non-scriptus. Abundant in woods, hedges, and pastures. May. Hamilton wood by the railway &c. Root a coated egg-shaped bulb. Scape or flower-stem, simple, from 6—12 inches high, round, smooth, solid, brittle, bowed down at top when it begins to flower, but upright in fruit. Leaves four,

six, or sometimes more, long, linear, channelled, acuminate, all from the root, flaccid, shining, grass green, nodding at the summit, shorter than the scape. Flowers in a long *drooping* raceme or spike, from 8—12, often more, all pointing one way, pendent, fine purplish blue, sometimes white, fine scented, 6-parted to the very base, the extremity rolled back—bracteas two to each flower, linear, at the base of the peduncle. The *Scilla Nutans* of Stokes and Smith. The roots, which are poisonous when fresh, may be converted into starch, or prepared as a substitute for gum Arabic. This is the “*azur’d Hare-bell*” mentioned in Shakespeare’s *Cymbeline*.

GENUS VIII. ASPHODEL, *Narthecium*. Stamens woolly—blossom of 6 spreading petals.

Species I. *Lancashire Asphodel*, N. *Ossifragum*. Bogs and moors. July, August. On the Farm of Drumloch &c. Root creeping. Scape or flower-stem 6—8 inches high, smooth, ascending, simple, decumbent at the base, with 1 to 3 alternate, short, somewhat membranaceous leaves or scales running into bracteas as they approach the flowers. Leaves all from the root, equitant, sword-shaped, ribbed, sheathing at bottom, edge membranaceous, about half as long as the scape, like those of the *Iris*, but much

smaller. Flowers in an upright, loose, terminal, solitary spike, persistent, peduncled, bright yellow—peduncles alternate, sometimes 2 together, upright angular, with a small reddish bractea at the base of each—seed-vessel brown or deep yellow, shining—seeds furnished with an appendage at each end.

GENUS IX. LILLY-OF-THE-VALLEY, *Convallaria*. Stigma blunt, 3-cornered—petals of the perianth (or blossom) 6-toothed—berry globose, 3-celled.

Species I. *Lilly-of-the-valley*, *C. Majalis*. Waste places about Barncluth; Near the fall of the Clyde, plentiful. May. Root creeping. Leaves ovate-lanceolate, from the root, two, on long petioles, with scaly cut sheaths, elliptical, ribbed, entire, acute, four or five inches long, of a bright green colour. Flowers *racemed spiked*, bell-shaped, pure white, very fragrant, 6—8 in a raceme, nodding—berry scarlet, spotted before it is ripe. The whole plant is smooth, and is common in gardens. The root and flowers are bitter and purgative in dozes of 2 scruples. The leaves dye a durable green.

Species II. *Solomon's Seal*, *C. Multiflora*. Woods at Bothwell. May, June. Stem round, from 18 inches to 2 feet high, simple, leafy, drooping at top. Leaves *ovate, elliptical, alternate, stem clasping*, facing one

way, large, marked with longitudinal nerves. Flowers white, green at the base and tip—peduncles *axillary*, 1 or many flowered—berries round, of a blackish blue colour, varying to red and purple.

4. *Flowers incomplete, with a single calyx-like perianth.*

GENUS X. RUSH, *Juncus*. Calyx 6-leaved, glumaceous *i. e.* like the chaffs in grasses—seed-vessel superior 3-celled, 3-valved—seeds many. The leaves of the rush are mostly rounded, sheathing like grasses; and the stems are filled with pith.

1. *Rushes without leaves, the flowers on the side of the stem near the top.*

Species I. *Hard Rush*, J. *Glaucus*. Rare in many places, but frequent here, in wet pastures and road sides. July. Old road behind Greenfield; ditch by a hedge at Deadwaters Ross; on the Camp Bleachfield &c. abundant. Root creeping. Culms or stems 1—2 feet high, slender, elegant, in bundles, glaucous, rigid, *deeply*, and finely fluted or *striated*, with blunt blackish brown, shining sheaths at the base. Panicle of flowers loose but *upright*, slender, much branched, on the side of the stem about one third below the tip—calyx lobes awl-shaped, streaked, the 3 inner shortest, pale brown—seed-vessel *elliptical*, rather *pointed*, *shorter* than the calyx—bracteas

small, ovate, 2 to each flower—flower-stalks very short 1 or 2-flowered.

Species II. *Soft Rush*, J. Effusus. Abundant in wet and marshy pounds. July. Root creeping. Stems generally taller than the former, leafless, erect, pale green, *soft*, brittle, and full of pith, which in this and the following species is continuous, but in the former regularly interrupted by cells or void spaces—root scales or sheaths, light brown, blunt, awned. Panicle or bunch of flowers loose, very much branched, spreading—seed-vessel blunt—leaves of the calyx lanceolate—seebulate, pale greenish. This is the common rush used for making besoms, mats &c. The pith is used by the chandler for making rush or watch-lights.

Species III. *Roundheaded Rush*, J. Conglomeratus. Abundant in damp pastures. July. Root creeping. Stems 2—3 feet high, in tufts, rather stiff, dark green, *minutely* striated—sheaths or scales at the base very long and dark, minutely streaked, ending in a short awn. Bunch of flowers in *dense balls*, as it were sessile, 2 or three inches below the apex—stamens 3—leaves of the calyx lanceolate, 2-ribbed—seed-vessel small, retuse, 3-lobed, shining, as long as the calyx. Turf or surface draining seems to be the best method which has yet

been adopted for extirpating this and the former species from pasture lands.

2. *Leaves all from the root. Flowers on the tip of the stem.*

Species IV. *Moss Rush*, J. Squarrosus. Common in moors and heaths. July. Drumloch; near Newhouse &c. Root fibrous. Stem *leafless*, 12 inches long, straight, stiff, incining to angled. Leaves all from the root, bristle-shaped, densely tufted, lying close to the ground, *stiff*, slender, channelled, pointed, smooth, dilated at bottom, sheathing. Bunch of flowers terminal, long, upright, branched, clustered, with membranaceous cut sheaths ending in a bristle-shaped leaf as long as the bunch of flowers—peduncles 1 or 2 flowered—leaves of the calyx ovate-lanceolate, shining brown, with a pale line down the middle—seed-vessel palish brown, 3-sided, obtuse, mucronate. Found only on a barren soil.

3. *With leafy stems.*

Species V. *Round-fruited Rush*, J. Bulbosus. Common in moist fields. August. Marshes about Holytown; by the paths in the Back-planting &c. Root creeping. Stems numerous not branched, leafy, *compressed*, the base cylindrical, 6—12 inches high. Leaves mostly from the root, linear, edge incurved, shorter than the stem—sheaths cut, edge and tip scariose. Panicle of flowers decomposed above, erect, many-

flowered, first branchy generally longest terminal, *shorter* than the bractees—flower single at the division—calyx leaves equal, brown, shorter than the seed-vessel—seed-vessel *roundish*, very blunt, mucronate.

Species VI. *Toad Rush*, J. Bufonius. Damp watery places, every where. July, August. Old run below Hamilton Bridge &c. Root fibrous, tufted. Stems numerous 4—8 inches high, simple below, forked above, round, with only one leaf, generally near the middle. Leaves few, slender, channelled *angular*, between *thread* and *bristle-shaped*, pale green, acute, shorter than the stem. Flowers solitary, 1-rowed, mostly *sessile*, in a long 2-forked panicle—divisions of the calyx or perianth green with membranous white margins, unequal; inner broad ovate, flat; outer keeled, twice the length of the seed-vessel—seed-vessel elliptical, blunt. A small insignificant plant with few attractions, affecting sandy or gravelly places where the water stands in winter.

Species VII.? *Little Bulbous Rush*, J. Ulliginosus. In marshes and places partly dried up in the summer. August. About Airdrie; Wrangham loch near Holytown &c. abundant. A very variable plant. Root fibrous. Stem 3 to many inches long, *leafy*, slender, striking roots at the joints,

bulbose at bottom, branching above—branches divaricated. Leaves *bristle-like, channelled*, smooth, cellular, cells in a double row alternating. Heads of flowers from 2—5 but oftenest 3-flowered, flowers sessile—bracteas scariose, shorter than the flowers—lobes of the perianth equal, lanceolate, pointed, 3-ribbed, edge scariose, dark brown, red, keel green—seed-vessel acute, 3-sided, blunt, opaque, rather longer than the perianth.

4. *With leaves apparently jointed.*

Species VIII. *Sharp-flowered Rush*, J. Acutifloras. Common in bogs and marshy places. July, August. Moist fields on the farm of Allington &c. abundant. Root fibrous, creeping. Stem rather hard, leafy, slender, upright, slightly compressed, smooth 1—2 feet high, joints fistular. Leaves *knotty, jointed*, especially when dry, 3 or 4 on the stem, sheathing, *compressed*, smooth. Panicle in flower and fruit very much divided, terminal, with long, slender, smooth branches, the extreme ones sometimes patent or even reflected—leaves of the perianth lanceolate, pointed, green or chocolate coloured, all alike—seed-vessel 3-sided, *pointed*, light brown, shining, *as long as the perianth*.

Species IX. *Shining-fruited Rush*, J. Lampocarpus. Frequent in boggy places.

July, August. On Allington farm &c. Root creeping. Stems 3—12 inches high, compressed, many leaved. Leaves *compressed*, sheathing, distinctly jointed, stiff, pointed. Panicle terminal, *compound*, upright, with stiff nearly simple branches—flowers 5 or 6 together, sessile—leaves of the perianth unequal, inner *blunt*—seed-vessel 3-sided, very large, black, varnished, acute, *longer* than the perianth.

GENUS XI. WOOD RUSH, *Luzula*. Seed-vessel 1-celled, 3-seeded—in other respects like *Juncus*. The following have flat leaves fringed with hairs.

Species I. *Great Hairy Wood Rush*, *L. Maxima*. Common in moist woods and shady banks. May. Bank between Avon Bridge and Barncluith. Banks by Auchingramont Bridge on the Brandon road &c. Root fibrous. Culm or stem 1—2 feet high, upright, leafy, striated. Leaves broad, edge hairy, light green, 8 or 9 ribbed, ribs seen best when held between the eye and the sun—the stem leaves shorter. Panicle somewhat cymose, repeatedly divided, somewhat divaricated—peduncles elongate, of about 3 flowers—bracteas linear, hairy, acute—leaves of the calyx equal, acuminate, chesnut coloured, with a white scariosse margin—seed-vessel ovate, acute, brown, *shorter* than the perianth.

Species II. *Small Hairy Wood Rush*, L. *Pilosa*. Common in woods. April, May. Hamilton wood near the wood yett; among the bushes at the top of Barncluith green &c. Root in tufts, stoloniferous. Stem 6—12 inches high, slender, simple, leafy. Leaves broad, those on the stem short, those from the base long and numerous—all hairy at the margin. Panicle divaricate, slightly compound—peduncles 1-flowered, bent back—leaves of the calyx ovate, acute, dark brown, edge white—seed-vessel heart-shaped, blunt, rather longer than the calyx—seeds with a hooked appendage at the top. A much smaller plant than the former.

Species III. *Field Wood Rush*, L. *Campestris*. Frequent in dry pastures. April, May. Abundant, in pastures about Barncluith, Chatelherault &c. Root fibrous, creeping. Stems 4, 6, or 8 inches high, leafy. Leaves linear, flat, 5 ribbed, hairy at the margin, especially at the orifice of the sheaths. Flowers collected into short ovate spikes one of which is generally *sessile*, the rest pedunculate, 10 or 12 together—leaves of the calyx acuminate, shining, keeled, edge white—seed-vessel *blunt*, 3-sided, longer than the perianth. The round headed variety, *J. Erectus*, is abundant about Dalziel.

GENUS XII. Dock, *Rumex*. Calyx single, 6-leaved. Seed 1, 3-angular, covered by the three inner husklike leaves of the calyx.

1. *Inner lobes of the calyx entire.*

Species I. *Great Water Dock*, *R. Aquaticus*. Rare. On the borders of the lake at Woodhall. July, August. Root thick, astringent. Stem 3—5 feet high, upright, angular, strongly furrowed. Leaves *lanceolate, acute*, the lower ones heart-shaped at the base, rather glaucous, very large, often a foot or more long, and 4 inches broad in the middle. Whirls of flowers close together—lobes of the calyx ovate, veined, rarely slightly toothed, bearing small *grains* which become large, oblong, lanceolate. The leaves are acid and of a laxative quality. A decoction of the root, which is very astringent, may be used as a wash for putrid spongy gums. When powdered it makes an excellent tooth-powder, which may be used without endangering the enamel.

Species II. *Curled Dock*, *R. Crispus*. Frequent in waste places. June, July. Root yellowish. Stem 2 or 3 feet high, angular, grooved, branched, smoothish. Leaves lance-shaped, acute, on leaf-stalks, long, narrow, much curled at the margin. Whorls of flowers very numerous and crowded, the lower ones closely leaved—

lobes of the calyx very large, heart-shaped, entire, veined, greenish, each furnished with a reddish, or orange coloured *grain* or tubercle. The fresh roots bruised and made into an ointment or decoction, cure the itch. The seeds have also been successfully used in dysentery.

Species III. *Bloody Dock*, or *Bloodwort*, *R. Sanguineus*. Bothwell woods; by hedge roots above Covant burn Bridge, and at Brae park Silvertonhill; on the bank between Avon and Barncluith gardens, abundant. Stem upright, branched, angular, leafy, smooth, 2 or 3 feet high. Leaves below *heart-shaped, lanceolate*, the upper ones *lanceolate, waved*, generally filled with a red liquid substance which gives a blood colour to the veins and petioles. Flowers in small distinct whorls, the lower ones sometimes accompanied with small leaves—lobes of the calyx *oblong*, one of them at least bearing a very large, globular, red grain. The leaves are laxative, the seeds astringent.

2. *Inner lobes of the calyx toothed.*

Species IV. *Sharp Dock*, *R. Acutus*. Occasionally in moist meadows. July. In a marshy stripe behind Ross House &c. Stem angular, grooved, smooth, rather flexuose. Leaves *cordate-oblong*, acuminate. Whorls of flowers small, distinct,

each accompanied by a small leaf—lobes of the calyx oblong, the inner rather toothed, *all* bearing red grains. This bears a very close resemblance to the former species.

Species V. *Fiddle Dock*, R. Pulcher. Rare. On an embankment of stones by the Avon between Barncluith and Hamilton wood. July. Stem *smooth*, diffuse, procumbent, widely spreading, branched—branches long, straggling, inclined. Leaves smooth, light green, the upper ones oblong, those from the root panduriform *i. e.* so remarkably contracted in one part as to resemble a fiddle. Whorls of flowers small, distinct, leafy—lobes of the calyx oblong, teeth sharp and numerous, strongly reticulated, one of them principally bearing a grain.

Species VI. *Broad-leaved Dock*, R. Obtusifolius. Common by road sides and ruins. July. Roadside at Hamilton bridge &c. Root yellowish. Stem 2—3 feet high, erect, branched, furrowed, *roughish* between the elevated lines which form the furrows. Leaves on the upper part of the stem, ovate, lanceolate, acute; those from the root, *heart-shaped*, oblong, *blunt*, very large, generally crisped at the margin, exceedingly grateful to deer. Whorls of flowers rather close, somewhat leafy—lobes of the calyx *ovate*, one chiefly bearing a grain, largest *on the* outermost lobe—inner lobes large

when in fruit, toothed towards the base, teeth awl-shaped. This is the commonest of our Docks. The leaves were formerly much used for wrapping up butter, from which it obtained the name of butter dock.

3. *Flowers diacious*—i. e. *stamens and pistils on separate plants.*

Species VII. *Common Sorrel*, R. *Acetosa*. Common in fields, pastures, and church yards. June. Hamilton church yard &c. Root fibrous. Stem 1—2 feet high, simple, erect, round, striated, leafy, slender. Leaves *oblong, arrow-shaped*, barbs or segments *turned back*, approaching the leaf-stalks; radical leaves on stalks, blunt; stamens sessile, pointed, the sagitate lobes embracing the stem. Clusters of flowers compound or aggregate in half whirls, reddish, drooping, containing stamens and pistils on distinct plants—lobes of the calyx not cut, large, heart-shaped, reticulated with veins, sometimes with grains. This is the Sour-ock of the children and common people. The dried root changes water to a beautiful reddish colour, resembling wine. The acid leaves are used in salads and sauces. The expressed juice cleared by settling, and evaporated, yields an essential salt, sold for salt of lemons, and used to take iron moulds out of linen.

Species VIII. *Sheep's Sorrel*, *R. Acetosella*. Common in dry sandy pastures &c. May—July. Mount at Chatelherault; head of the Brae park Silvertonhill; Road sides at Raith &c. Root *creeping*. Stems 2—12 inches high, somewhat flexuose, slightly branched. Leaves variable—radical ones *hastate*—stem ones *lanceolate* or *hastate*, barbs or lobes acute, spreading or even recurved. Flowers in half whirls—lobes of the calyx ovate, reddish, never having grains. This is only half the size of the preceding species, more slender in every part, and more of a red and tawny colour. The plant containing flowers with stamens only, is usually larger than that which has only pistiliferous flowers.

GENUS XIII. ARROW GRASS, *Triglochin*. Calyx of 3 leaves—blossom also of 3 leaves, like the calyx—seed-vessels 3—6 united by a lengthened receptacle.

Species I. *Marsh Arrow Grass*, *T. Palustris*. Frequent in boggy places. August. Ditches and peatmosses near Crosshill Kilbride; mossy ground at Leelaw Lesmahagow; Ditch between Chatelherault and the deer park &c. Root fibrous, tufted. Scape or flower-stem 6—12 inches high, rounded, simple. Leaves all from the root linear somewhat cylindrical, fleshy, slightly *grooved* on the upper side, bundled, sheath-

ing at the base. Flowers small, greenish, in a linear many flowered spike, on short erect peduncles—seed-vessels *three*, smooth.

ORDER III. POLYGYNIA, *i. e.* many pistils in each flower along with the 6 stamens.

GENUS XIV. WATER PLANTAIN, *Alisma*. Calyx 3 leaved—blossoms 3 petalled—seed-vessels many, clustered, distinct, 1-seeded, not opening.

Species I. *Great Water Plantain*, *A. Plantago*. Frequent in ditches and stagnant waters. July. Deadwaters Ross; Ditch near Bothwell Haugh; Old run below Hamilton bridge entirely covered with it. Leaves all from the root, smooth, *egg-shaped*, *acute*, 7-ribbed, entire, on very long leaf-stalks. Scape or flower-stem 2—3 feet high, 3-sided, upright, branched upward; branches whorled, slightly compound, with bracteas at their base. Flowers pedunculate, blueish white or pale rose coloured—petals 2, roundish, large, flat, spreading, very deciduous—fruit *depressed*, seed-vessel *obtusely* triangular. The roundish white roots are much recommended, especially in Russia, as a specific against hydrophobia.

Species II. *Ranunculus Water Plantain*, *A. Ranunculoides*. Rare, in bogs and watery places. August. In the marsh beyond Possil. Leaves all from the root,

linear-lanceolate, on long leaf-stalks, smooth, not ribbed. Scape 8—12 inches high, upright, round. Flowers pale purple or bluish, opening about noon—peduncles simple, verticillate—petals longer than the preceding—fruit globose, germens acute, 5-sided, uncovered.

CLASS VIII.

OCTANDRIA EIGHT STAMENS IN EACH FLOWER. ORDER 1st. MONOGYNIA ONE PISTIL IN EACH FLOWER ALONG WITH EIGHT STAMENS.

1. *Style club-shaped, stigmas 4-cleft, revolute.*

GENUS I. WILLOW HERB, *Epelobium*. Calyx long, limb 4-parted—blossom 4-petalled—seed-vessel bluntly 4-sided, 4-celled, 4-valved, many seeded.

Species I. *Persian Willow Herb*, *E. Angustifolium*. Rocks to the E. of the kirk of Shotts; by the side of the Avon nearly opposite Barncluith; by the fall at Corhouse; and on the N. E. bank of the Clyde a little below Hamilton bridge in great abundance. Root creeping. Stem 2—5 feet high, upright, branched above, round, smooth and leafy. Leaves scattered, linear-

lanceolate, not cut, *veined*, smooth, somewhat sessile, sea green beneath. Flowers alternate, purple or white, showy, growing in a *pyramidical* spike on purple peduncles, the length of the germen, bending down before the flowers open, but afterwards erect, seldom more than 4 or 5 blown together on the same spike—the two lowermost petals somewhat remote from each other—stamens declined, stigma 4-cleft, pollen blue—the stamens and pistils move regularly during impregnation. From the similitude of the leaves of this species to those of the willow, it has received the name Willow-herb, or French Willow or Saugh.

Species II. *Hairy Willow Herb*, E. *Hirsutum*. Rare, near Daldowie; in Hamilton wood, but not common. Root creeping. Stem 3—4 feet high, upright, branched, leafy, very hairy, hairs pinnate. Leaves *ovate-lanceolate*, *between* toothed and serrate, hairy; lower ones opposite half embracing the stem; upper ones alternate merely sessile. Flowers large, showy, purple or flesh coloured, somewhat bell-shaped, and hanging down a little, on peduncles, solitary, alternate—petals larger than the calyx—stigmas 4-cleft. The shoots when fresh gathered have a transitory fragrance resembling scalded codlings, whence its name of codlings and cream.

Species III. *Small-flowered Willow Herb*, *E. Parviflorum*. Frequent in watery places. July. Deadwaters Ross, and Allington; marshy places in a field by the road side $\frac{1}{2}$ mile W. of Calder Iron works &c. Root fibrous. Stem 12—18 inches high, nearly simple, densely woolly, round, firm, very leafy. Leaves sessile, lanceolate, alternate, toothed, downy on both sides—down soft. Flowers in a sort of leafy raceme, small, pale rose coloured—stigma 4-cleft.

Species IV. *Mountain Willow Herb*, *E. Montanum*. Very common on rocks, walls, and in woods. July. By the railway Hamilton wood; banks of Barncluith burn &c. Root somewhat creeping. Stem 6—18 inches high, upright, red, round, smooth, simple, sometimes slightly downy. Leaves *ovate-lanceolate*, *toothed*, smooth on the upper side, on the under, paler and very slightly hairy, veins woolly—lower leaves opposite, often of a bright red colour—upper ones alternate, slender. Flowers few, in a leafy clustered raceme—petals obcordate, deeply emarginate, pale purple, veined with deeper purple lines—leaflets of the calyx 4, with a conspicuous mid-rib, slightly hairy on the outside and at the edges—stigma 4-cleft—seed-vessels long, reddish.

2. *Stigma undivided.*

Species V. *Square-stalked Willow Herb*,

E. Tetrajonum. Frequent in marshes and ditches. July. About Skellytown &c. Root fibrous. Stem erect, 12—18 inches high, 4-sided, rather smooth, branched—branches somewhat spreading. Leaves nearly lanceolate, a little toothed, sessile. Flowers rose coloured, few, with a leaf at the base of each—petals obovate, cloven—style club-shaped, undivided—pods very long.

Species VI. *Marsh Willow Herb*, *E. Palustre*. Occasionally in bogs and ditches. July. Ditch by the road side leading in to the farm house of Laigh Motherwell &c. Root fibrous. Stem *round, mostly* simple, upright, rather hirsute, 6—16 inches high. Leaves linear-lanceolate, rarely toothed, sessile, very minutely downy. Flowers in a sort of leafy raceme, very small, pale rose coloured—petals emarginate, not cloven in the middle—calyx a little hairy on the outside—style linear undivided.

GENUS II. **BILBERRY**, *Vaccinium*. Calyx 4 or 5-cut, superior—blossom one-petalled, bell-shaped, 4 or 5-cut, lobes reflexed—stamens 8 or 12—anthers with 2 pores or awns opening at the tip—berry 4-celled, many seeded.

Species I. *Bilberry* or *Blackberry*, *V. Myrtillus*. Frequent in woods. May. Hamilton wood in many places, especially

opposite Silvertonhill. Woods at Corhouse &c. A small tufted bushy plant. Root woody. Stem shrubby, erect, angular, 1 or 2 feet high, very much branched—branches smooth, green, twisted, sharply angular, especially when young. Leaves ovate, alternate, petioled, serrate, light green, smooth, veined. Flowers flesh coloured, or rather pale reddish, purple *solitary*, *axillary*, drooping, globular, or nearly so, inodorous—stamens 8—10—anthers 2 horned, furnished at the back with 2 spreading awns, opening at the tip—berry black or very dark blue, globular, with a dimple at top, slightly acid, esculent—seeds streaked. The moor game live upon the berries in autumn. They are very acceptable to children, either eaten by themselves, or with milk, or in tarts.

Species II. *Red Whortle Berry*, V. *Vitis* Idea. On the very edge of the precipice between Corhouse and Bonnington fall. May. Root creeping, woody. Stems mostly upright 3—5 inches high, little branched, twisted or flexuose, angular, smooth, pliant. Leaves ever-green, reverse ovate, *dotted* beneath, thick, stiff, reticulately veined, ending in a rounded tubercle—edge *turned over*, not cut, serrated or toothed. Flowers *in elegant drooping clusters*, bell-shaped, *4-cleft*, pale pink or flesh coloured, terminat-

ing the stem or branches—bractæas coloured, fringed, concave—berries red, acid, unpleasant until baked—anthers awnless, tip tubular, open—stigma simple. The berries are sent in large quantities from West Bothnia to Stockholm for pickling. They are excellent in medicine for colds, sore throats, and all enitation of the mouth or fauces; and are far preferable to that of the red currant as a sauce for venison.

Species III. *Cranberry*, V. *Oxycoccus*. Frequent in marshes. June. Moors in Kilbride, Shotts, and Avondale. Root fibrous. Stems 5—10 inches long, thread-shaped, very wiry and straggling. Leaves ever-green, small, petioled, upright, *ovate*, edge not in the least cut, *turned* over, glaucous beneath. Flowers drooping, of a beautiful rose or flesh colour, singularly elegant—blossom *4-partite*, revolute—flower-stalks *terminal*, *single* flowered—anthers awnless ending above in long open separate tubes—stigma pointed—berries pale red, mottled, or purplish red when fully ripe. These berries made into tarts are much esteemed, though some dislike them on account of their peculiar flavour. They are frequently brought to market in England.

GENUS III. HEATH, *Erica*. Calyx *4-parted*—blossom conical, bellied, limb *4-cut*,

recurved—anthers awned at the bottom, opening in 2 oblong pores, which before flowering are connected—seed-vessel 4-celled, 4-valved, dissepiments or partitions from the middle of the valves.

Species I. *Fine leaved Heath*, E. Cinerea. Abundant on heaths. July, August. Root woody. Stems shrubby, 8—12 inches high, erect, with opposite branches—bark ash-coloured. Leaves 3 *in a whirl*, triangular, when young fleshy, smooth and shining, transversely wrinkled, with a whitish longitudinal furrow below, beset towards the end with a few scattered, hair-like points. Flowers in rather long, whorled racemes, (sonorous when struck)—blossom 3 times as long as the calyx, blueish or white, shriveling and turning to a fawn colour, orifice 4-cleft, clefts very shallow—anthers with 2 serrated crest-like appendages at the base—styles lightly exserted—stigma headed—peduncles shorter than the flowers, purplish brown, somewhat downy, the lower nodding, the upper upright, with a bractea about the middle.

Species II. *Cross-leaved Heath*, E. Tetralix. Frequent in heaths and moist places. July, August. Stems 6—12 inches high, shrubby, brown, somewhat rugged from the remains of the leaves which have fallen off, *branched*—branches woolly. Leaves peti-

oled; spread revolute, whirled commonly in *fours*, but sometimes in fives, pressed close to the stem, upper surface flat, lower concave and white, *fringed* or ciliated, each hair terminating in a small round gland. Flowers in heads, hanging down one over another, looking one way, flesh coloured or white, divided into 4 very shallow segments, which turn back—calyx leaflets 4—6 linear, 3 times shorter than the corolla, woolly, fringed with long hairs tipped with brownish red globules—anthers with two white awns at the base—style *as long* as the ovate corolla—bracteas 3 at the base of each flower on the upper side, shaped like the calyx the lowermost one largest—capsule villose truncate.

GENUS IV. HEATHER OR LING, *Calluna*. Calyx double, each 4-leaved, inner one coloured—seed-vessel 4-celled, 4-valved.

Species I. *Common Heather*, *C. Vulgaris*. Very abundant in Moors and heaths. June—August. Stem shrubby, ascending. Leaves arrow-shaped, opposite, squarrose, in 4 rows. Flowers flesh coloured or white, racemes, facing one way drooping—stigma 4-lobed—bracteas 4, at the base of the calyx. The young tops were formerly brewed with as much malt into a kind of beer. The green tops and flowers are used in the Western Isles to dye yarn of a yellow

colour. Cows not accustomed to browse on it give bloody milk, but are soon cured by drinking plentifully of water. None of the heaths are found in America, in New Holland, nor scarcely in the Torrid Zone.

GENUS V. MAPLE, *Acer*. Calyx 5-cleft, inferior—petals 5—seed-vessel 1-seeded, winged.

Species I. *Plane-tree* or *Sycamore*, *A. Pseuda-Platanus*. Frequent in woods and hedges near houses. May. A large tree. Trunk straight—branches smooth—twigs depending. Leaves 5-lobed, unequally serrated, blunt, smooth, paler beneath. Flowers in hanging racemes rather woolly, green, sometimes barren—stigmas downy. The wood is used for turnery work. At certain seasons the wild bees and wasps may be seen about it in crowds.

Species II. *Common Maple*, *A. Campes-*
tre. In woods and hedges. May, June. A small tree with cork-like wrinkled bark, and spreading branches. Leaves 5-lobed, blunt. Flowers in *erect* racemes, greenish stamens yellow—fruit with 2 much spread, reddish, wings. The timber is superior to that of the beech for all the uses of the turner. It is often used by musical instrument makers for its lightness; for gun stocks on account of its hardness; and it was formerly in great request for tables on account of its *hiteness*.

GENUS VI. SPURGE LAUREL, *Daphne*.
 Calyx or blossom inferior, 4-cut, separable
 into 2 lamina. Berry 1-seeded.

Species I. *Spurge Laurel*, *D. Laureola*.
 Bothwell woods. March. This is a low,
 ever-green shrub rising with several stalks
 to the height of 2 or 3 feet. Stems rather
 stout, dividing at top into several branches,
 naked below, leafy above, and hence
 "bearing some resemblance to a Palm."
 Leaves ever-green, lanceolate, smooth, thick
 and of a lucid green, coming out irregular-
 ly on every side, and sitting close to the
 branches. Flowers green, in *axiliary ra-*
cemes of 4—6 flowers, among the leaves
 towards the upper part of the stalks, appear-
 ing soon after Christmas if the season be
 not severe—stamens in 2 rows—berry
 ovate, black.

ORDER II. TRIGYNIA, OR 3 pistils in
 each flower along with the 8 stamens.

GENUS VII. PERSICARIA, *Polygonum*.
 Calyx or blossom 5-parted, inferior—fruit a
 1-seeded nut.

1. *With 3 pistils and the 8 stamens.*

Species I. *Snakeweed*, *P. Bistorta*. In
 the E. end of Shawfield bank; in waste
 ground near Kilbride; in a glen at Casile-
 milk in great abundance. On the brink of
 the Avon at Haugh-head, and on the banks
 of the Calder between Coursington bridge

and Carfin. Root large, crooked whence its name snakeweed, very astringent. Stems 1—2 feet high, erect, *simple*, bearing *one* spike of flowers. Leaves ovate, entire (or waved) glaucous and veined beneath, the radical ones on *long winged* leaf-stalks. Flowers in a single, dense, erect, terminal spike 1—2 inches long, of a delicate flesh colour, pediceled with small brown bracteas at the base—stamens 8, 3 opposite and 5 interposed—styles and stigmas 3—fruit 3-angular. The root is one of the strongest vegetable astringents. About Manchester the young shoots are substituted for greens under the name of Patience Dock.

Species II. *Knot-grass*, *P. Aviculare*. Abundant by road sides and paths, in gravelly soils. April—October. Both sides of the road between Hamilton and Hamilton bridge are nearly covered with it. Root fibrous, slightly woody. Stem 6—18 inches long, *procumbent*, *herbaceous*, divaricated, knotted at every joint, and abounding with short, sheathing, skinny stipules, with *distant* nerves. Leaves alternate, *ovate* or *lanceolate*, edge rough, varying much in size, small. Flowers in the *axils* of the leaves, not conspicuous, peduncled, 2—5, greenish or reddish, edged with white—stamens 8, 5 opposite, 3 interposed, *connected* by a gland—styles and stigmas 3,

very short—fruit large, 3-sided, dark, shining. This is generally an insignificant plant crawling on the ground, with small flowers which may perplex the young botanist unless provided with a glass. It is given to sick swine that refuse their meat. Like many other plants it has been called a grass, though bearing no resemblance to real grasses.

Species III. *Black Bindweed*, *P. Convolvulus*. Frequent in fields. July, August. Fields at Camp Bleachfield &c. Root fibrous, of a brown colour. Stem *angular*, *twining* about corn and other plants to the height of 2 or 3 feet, sometimes roughish, branched. Leaves pedicelled, *cordate*, *sagittate*, pale green, smooth, entire. Flowers in bundles or spikes, nodding, white, on the outside green and purple—the 3 outer segments *bluntly keeled*, and not having the keel dilated, larger than the 2 inner segments—stamens 5 interposed and 3 opposite—styles and stigmas 3—fruit black 3-seeded.

2. *With a pistil, and generally fewer than 8 stamens.*

Species IV. *Amphibious Persicaria*. *P. Amphibium*. Frequent in watery places. July, August. Old run below Hamilton bridge very abundant. Root creeping. Stems 1—3 feet long. *floating*, rooting, scarcely branched. Leaves *lanceolate*, *acute*, heart-shaped at the bottom, pleasant green,

glossy, finely serrated, edge *rough*, or acculeated, on leaf-stalks, arising from long rough entire tubular sheathes or stipules which clothe the stem. Spike of flowers *ovate, terminal*, mostly solitary, bright rose coloured—Stamens often 5, shorter than the lobes of the blossom—style forked—fruit *ovate*, compressed.

P. Terrestre, a variety of the above grows by the roadsides near Clyde bridge. It has an erect stem, dark rough leaves, glabrous stipules, and stamens shorter than the lobes of the blossoms. It is seldom seen in flower.

Species V. *Spotted Persicaria*, *P. Persicaria*. Erequent in moist ground and waste places. August. About Deadwaters Ross &c. Root fibrous. Stem upright, sometimes rooting at bottom, 1—2 feet or more high, alternately branched, round, smooth, gradually thickened above the joints, often red. Leaves *ovate, lanceolate*, spreading, deflexed, each generally marked with a central black kidney-shaped spot, the under side spotted with glands, and sometimes white and downy. Spikes of flowers *ovate, oblong*, upright, terminal and lateral, dense, greenish or reddish on long *smooth* peduncles—stamens mostly 6—styles nearly 2-cut—stipules *fringed*.

Species VI. *Dockleaved Persicaria*, *P. Lapathifolium*. Frequent in cornfields and

on dunghills. August. About Earnock &c. Stem 1—2 feet high, round, smooth, sometimes spotted, hollow, branched—branches spreading, swelling much above each joint, patulous *i. e.* open, and sometimes decumbent. Leaves large, *ovate, lanceolate*, shortly petiolate pale green, mealy—the upper ones glandular. Spike thick, *ovate*, erect, becoming drooping, mostly of a pale green, but sometimes reddish, terminal and lateral on *rough* glandular peduncles—stamens mostly 6—style 2-lobed—stipules *not* fringed strongly ribbed at bottom.

Species VII. *Biting Persicaria*, P. Hydro-piper. Rare in watry places. August, September. At Stonelaw parish of Rutherglen, and in the ditch between Chatelherault and the deer park. Stem 1—2 feet high, upright, much branched, upper part of the joints swelled. Leaves pale green, *lanceolate, waved, spotted*. Spike of flowers, *lax, slender* drooping, lateral and terminal—blossoms reddish, glandular on the outer side not at all crowded—stamens mostly 6, style cloven—stipules fringed. This plant has a very hot acrid taste.

ORDER III. TETRAGYNIA, 4 styles in each flower along with the 8 stamens.

GENUS VIII. HERB PARIS, *Paris*. Calyx 4-leaved—petals 4—berry 4-celled, 4-seeded, superior.

Species I. *Herb Paris*, *P. Quadrifolia*. Rare in moist woods. May, June. Banks a little above Calderwood. Near Darlings bridge Hamilton wood, where it was gathered by the late Joseph Hume M. D.; but I have not seen it there myself. Root fleshy. Stalk quite simple, or unbranched, upright, smooth, round, naked, a foot high. Leaves 4, in a cross, or sort of whorl, spreading, sessile, about the middle of the stem, ovate, quite entire, smooth, 3-ribbed, 3 or 4 inches long and 2 broad. Peduncle single, rising from the middle of the 4 leaves, somewhat angular, about an inch long, supporting one greenish purple flower, calicine leaves 4, linear lanceolate, acute, reflexed of the same colour as the flower—stamens with the anthers fastened one on each side to the middle of the filaments—berry purple black. Plant supposed to be poisonons, partaking of the same nature as opium.

GENUS IX. *MOSCHATELL*, *Adoxa*. Calyx half inferior, 3 cleft—blossom superior, 4-5-cleft—anthers terminal, 1-celled.

Species I. *Tuberous Moschatell*, *A. Moschatellina*. Frequent in woods and at the roots of hedges. April, May. At Blantyre priory; hedge roots about Avon Mill and between Hamilton and Barncluith; by the bridge near Meikle Earnock &c. Abun-

dant. A curious little plant with heads of greenish flowers which are ranged on a stalk in the form of a cube or square. Root perennial, creeping, with toothlike scales. Stem 6 inches high, weak, slender, simple. Leaves 2 or 3, radical, on long foot-stalks, triternate *i. e.* triply threefold, lobed and cut, 2 stalk leaves small and simply ternate, opposite, in the middle. Head of flowers, 5-flowered, greenish, one flower on the tip, the other 4 on the side of the flower-stalk in the form of a square—the top one 5-cut, with 10 stamens and 5 pistils, the side ones 4-cut, with 8 stamens and 4 pistils. Berry globular ripening in May and June. These and the flowers smell like musk, from whence some have called it musk Crowfoot.

CLASS X.

DECANDRIA TEN STAMENS IN EACH FLOWER.
ORDER FIRST MONOGYNIA HAS ONE PISTIL IN EACH FLOWER ALONG WITH THE TEN STAMENS.

GENUS I. WINTER-GREEN, *Pyrola*. Calyx very small 5-parted—petals 5, with 2 stamens at the base of each lobe—anthers

opening with 2 pores—seed-vessel 5-celled, superior.

Species I. *Lesser Winter-green*, P. Minor. On Clyde between the falls of Carra Lyn and Bonnington. Wood behind the Gardiners Lodge at Bothwell Castle. Hamilton Wood at the summit of a rock exactly opposite Silvertonhill, sparingly. July. Root creeping. Stem short, leafy, mostly simple. Leaves between *ovate*, and *rotundate*, *notched*, shining, smooth, on leaf-stalks. Flowers in a loose cluster, small, drooping, pale rose-coloured, on an angular peduncle or flower-stalk about 5 inches high—stamens *erect*, as *long* as the very short straight style—stigma *large*, with 6 divergent rays, quite included within the concave corolla. The different species of *Pyrola* in this part of the country seem often to have been confounded. In the above description I have thought it safest to adhere almost literally to Hooker and Greville.

ORDER II. DIGYNIA, two pistils in each flower along with the 10 stamens.

GENUS II. GOLDEN SAXIFRAGE, *Chrysosplenium*. Calyx 4 or 5-cleft, coloured on the inside—blossom awanting—seed-vessels with 2 beaks, many seeded.

Species I. *Opposite-leaved Golden Saxifrage*, C. *Oppositifolium*. Common, in *boggy* and shady places April, May.

Marshy place immediately below the hanging gate on Barncluith burn &c. Root creeping. Stem 2—4 inches high, square, tender, beset with a few stiffish white hairs, branched and forked at top. Leaves *opposite*, roundish, somewhat heart-shaped, notched, somewhat fleshy, yellowish green, whitish underneath. Flowers in a terminal leafy corymb, small, yellow, without a blossom unless the coloured calyx be called so, almost always 4-cut, and with only 8 stamens seed-vessel with 2 beaks—seeds of an orange colour.

Species II. *Alternate-leaved Golden Saxifrage*, *C. Alternifolium*. Not uncommon in the same situations as the last. March, April. At Cadzow Castle; on the Avon opposite Barncluith; Barncluith burn above the wooden bridge; Beetle's burn near the Clyde Iron works; Mauchlan-hole, Kilbride &c. Leaves *alternate*, numerous at the base, 2 only on the stem. Flowers mostly 4-cleft, central one 5 cut, with ten stamens. Nearly the same in all other respects as the former; only it flowers earlier, is higher in the colour, and is sometimes a little taller. Both plants are of a greenish yellow colour, the opposite leaved kind often covering marshy places and small rills in large patches.

GENUS III. SAXIFRAGE, *Saxifraga*. Calyx 5-cut, lobes upright—petals 5, slender at bottom—seed-vessel with 2 beaks, 2-celled, many seeded.

Species I. *London Pride*, *S. Umbrosa*. Bothwell Wood, and by a rill above Dalziel Camp. June, July. This is the None-so-pretty of the gardens, and is so well known that I only give the specific character. Leaves reverse egg-shaped, somewhat bluntly notched at the end, with a cartilaginous notched margin; stem naked, panicked; seed-vessel superior; petals between obovate and lanceolate, white or flesh-coloured, most beautifully dotted with yellow and dark red.

Species II. *Granulated Saxifrage*, *S. Granulata*. On the Clyde at Bogle's hole, Carmyle, Uddingston, Bothwell, Ross, and Lanark. By the Lead between Avon Mill and Avon Bridge, abundant. May. Root *granulated* with small clustered tubers. Stem 6—12 inches high, upright, rather viscid, covered with a glandular pubescence, *panicked* when the plant is luxuriant, but as Mr Greville observes, frequently giving off only 1 or 2 side clusters of flowers, with not more than 1 expanded on each at the same time. Leaves fleshy, those from the root *kidney-shaped*, on long foot-stalks, bluntly *lobed*—those of the upper part of the stem, *nearly sessile acutely lobed*—the root leaves

are most abundant—the leaf-stalks are glandular. Flowers large, white, rather fragrant—petals reverse egg-shaped, not spotted. The double variety grows abundantly at the front of Jerviston House, where it is regarded as an inveterate weed.

GENUS IV. KNAWELL, *Scleranthus*. Calyx tubular, constricted in the neck, limb 5-cut—blossom awanting—stamens inserted on the calyx—seed-vessel one celled, covered by the perianth.

Species I. *Annual Knawell*, *S. Annuus*. Frequent in sandy fields and dry rocky places. July. Fields about Allington, Merryton, Tollcross &c. Root fibrous. Stems slender, numerous, round, leafy, 3—6 inches high, much branched above in a forked manner, slightly pubescent, of a brownish or reddish colour. Leaves opposite, united, fringed, and membranaceous at the base, linear subulate, keeled, of a grassy green colour. Flowers without a blossom, green, inconspicuous, in axillary leafy clusters—calyx 10-ribbed, with 5 ovate lanceolate teeth very spreading when in fruit. The Swedes and Germans we are told, receive the vapours arising from a decoction of this plant into their mouths, in order to cure the tooth ache.

ORDER III. TRIGYNIA, 3 pistils in each flower along with the 10 stamens.

GENUS V. SANDWORT, *Arenaria*. Calyx 5-leaved—petals 5, but not cut as in the following genus—seed-vessel 1-celled, 3-valved.

Species I. *Three-nerved Sandwort*, *A. Trinervis*. Common about Hamilton. May. Cadzow burn above Brandon road; on the Clyde below Hamilton bridge; Old wall at Barncluith bridge, and on the banks of Barncluith burn; Blantyre Priory; Dalziel Camp &c. Stem 6—12 inches high, weak, very slender, ascending, much branched, hairy. Leaves *ovate, acute*, on leaf-stalks, fringed, mostly with 3 but sometimes with 5 *ribs*—upper leaves sessile. Flowers very small, white—petals reverse ovate, as long as the calyx—leaflets of the calyx *rough* on the keel, with 3 obscure ribs—peduncle or flower-stalk, long, from the forks of the stem, 1-flowered, bending down after flowering—seeds smooth.

Species II. *Thyme-leaved Sandwort*. *A. Serpyllifolia*. Frequent in dry fields and on wall tops. June, July. On the old walls of Craignethan Castle: at Chatelherault &c. Stems 2—6 inches high, very numerous, ascending, stiff, forked, minutely pubescent. Leaves *nearly sessile, ovate, scabrous*, small *ribbed*, numerous. Flowers small, white, *on short erect peduncles forming small leafy panicles*—petals as long as the calyx—

leaflets of the calyx, hairy, outer ones 5-ribbed, inner ones 3-ribbed—seeds wrinkled.

Species III. *Spring Sandwort*, *A. Verna*. Dry gravelly places on the N. Bank of the Canal between Calder and Kirkintilloch. Stems many, tufted, long, panicked above, much branched, slightly hairy, 3—5 inches high. Leaves without stipules awl-shaped, rather *blunt*, ribbed, wide at bottom, short, numerous. Flowers white, on flower stalks, in terminal few flowered panicles—petals *reverse* ovate, *longer* than the leaflets of the calyx—calyx leaflets ovate, acute, 3-ribbed, ribs remote, equal. May, June.

Species IV. *Red Sandwort*, *A. Rubra*, Frequent in Sandy fields. July, August. Stonelaw in the parish of Rutherglen; sand hills, Tollcross; on a steep brae by the road leading up to Chatelherault and in the pasture ground behind the garden wall &c. Stem *prostrate*, much branched and spreading especially from the base, round and glabrous. Leaves with torn or cloven ovate stipules, numerous, flat, *linear*, very narrow, somewhat fleshy, tipped with a minute *bristle*, longer than the internode, slightly hoary or glaucous. Flowers purple-red or bluish flesh colour in a terminal downy panicle—petals ovate, about as long as the calyx—calyx hairy, ribless—flower-

stalk solitary, in the axils of the upper leaves, pubescent, glandulose and viscid, deflexed after flowering—seed-vessel 3-valved, as long as the calyx—seeds wedge-shaped, compressed, roughish. The plants at Chatelherault are very small and are best seen about noon, when the little red flowers are fully expanded, for after that they begin to close up.

GENUS VI. STITCHWORT, *Stellaria*. Calyx 5-leaved—petals 5, deeply cloven—seed-vessel 1-celled, opening with 6 teeth—many seeded.

Species I. *Wood Stitchwort*, *S. Nemorum*. Frequent in damp woods. May, June. Castlemilk; burnside at Chantonhall; Clyde below Hamilton bridge, very abundant—Castlecairy woods about 16 miles from Hamilton abound with it. Root small creeping. Stems 1—2 feet high, weak and lax, rounded, hollow, pubescent above. Leaves rather large, pale green glabrous but rough with minute dots, lower ones *heart-shaped* with leaf-stalks, upper ones *ovate* sessile. Flowers numerous, small, white, erect, star-like, in *forked* divaricating, pubescent panicles, having a pair of small leaves at each of the forkings—petals spreading, 2-cut almost to the base—calyx hairy at the base, the segments with white margins—flower-stalks becoming reflexed—

seed-vessel ovate, 6-toothed. The whole plant is rather hairy.

Species II. *Common Chickweed*, S. Media. Extremely common in damp places and gardens from January to the end of the year. Plant very various in size. Stems *prostrate*, brittle, weak, well marked by a hairy line running down on each side, and these lines taking different sides between each pair of leaves, or decussate. Leaves *ovate* on leaf-stalks, the upper ones sessile. Flowers small white—petals deeply 2-cut, shorter than the calyx—calyx hairy—flower-stalks axillary and terminal, solitary, one flowered. The young shoots when boiled make an excellent pot herb.

Species III. *Greater Stitchwort*, S. Holostea. Abundant in dry woods and coppices. May. By the lead at Hamilton burn; Barncluith burn &c. Roots creeping. Stems growing thick together 12—18 inches high, 4-cornered, stiff, *upright*, rough, brittle, somewhat glaucous. Leaves rough at the *edge*, finely *serrated*, *lanceolate*, acute. Flowers pure white, on long rugged peduncles, from the axils of the upper pair of leaves, forming a sort of forked panicle—petals 2 times as long as the calyx, reverse-heart-shaped, somewhat 2-cut—divisions of the calyx *nerveless*—seed-vessel globular. Very conspicuous in spring from its brilliant

white stary blossoms, which contrast beautifully with the blue flowers of *Hyacinthus Non-scriptus* and the red flowers of *Lychnis Dioica* which are frequently found beside it.

Species IV. *Lesser Stitchwort*, *S. Graminea*. Common in dry pastures. June, July. About Holytown &c. A small and more slender plant than the preceeding. Stem a foot or so high, *nearly* erect perfectly smooth, angular. Leaves lanceolate acute edge smooth quite *entire*, blunter than the preceding. Panicles of flowers terminating, divaricating—peduncles smooth—blossoms white, the petals very deeply cleft and *scarcely longer* than the calyx—leaves of the calyx membranaceous, white, each with *three* green ribs, scariose at the margin. It is very common among Furze-bushes, Heath, and low Broom.

Species V. *Sea-green Chickweed*, *S. Glaucal*. Marshy places at Allington; ditch between Dalbeth and Tollcross; bog beyond Possil; bog at Boghead. Stems as slender as the last, smooth, *rather* upright. Leaves linear lanceolate, glaucous, edge smooth. Flowers almost twice as long as the preceding, upon long *solitary axiliary foot-stalks* (also terminal,) petals white, *deeply cleft* much longer than the calyx—*leaves of the calyx three ribbed*.

Species VI. *Bog Stitchwort*, *S. Uliginosa*. Common in rivulets, ditches and marshes. June. Marshy place on Barncluith green; ditches at Laigh Motherwell; pool at Lady well Motherwell &c. The whole plant is weak and slender, smooth, of a pale and somewhat glaucous green. Leaves elliptic lanceolate, small, quite entire, with conspicuously brown and callous tips. Flowers in irregular small panicles—petals two cut *shorter* than the calyx, very small and white—calyx 3 nerved. A much smaller plant than any of the former.

GENUS VII. CAMPION, *Silene*. Calyx tubular, cylindrical, or conical, 5-toothed—petals 5, claws long, 2-cleft—seed-vessel imperfectly 3-celled.

Species I. *Bladder Campion*, *S. Inflata*. Common in pastures and by road sides. June, August. Road side leading to Avon bridge, about Raith &c. Stem 1—2 feet high, branched upwards in a forked manner. Leaves tufted at the base, spatula shaped, stem ones opposite, *ovate*, mostly smooth and entire, rather thickish. Flowers *panicled drooping*—petals white, slightly nicked, rather naked—calyx *inflated* like a bladder, ovate, whitish, finely reticulated with coloured veins—seed-vessel ovate. A very variable plant, of a sea green colour as in the garden pea.

ORDER IV. Five pistils in each flower along with the 10 stamens—Pentagynia.

GENUS VIII. STONECROP, *Sedum*. Calyx 5, rarely 4, 6, or 7-cut—blossom 5-petaled—seed-vessels 5 with a nectariferous scale at their base.

Species I. *Orpine*, *S. Telephium*. Occasionally by the borders of fields and in stony waste places. July. Near the well below Hamilton Bridge Toll-house; border of a field above Covant burn bridge; about Jerviston, abundant &c. Stems numerous, *erect*, 12—18 inches high, simple, thickish, glabrous spotted. Leaves flat, *ovate*, *serrate*, large, fleshy, smooth, glaucous. Flowers purple, in a dense leafy terminal corymb. Often cultivated in gardens. Of a styptic astringent nature. The leaves used to heal cuts, and when boiled in milk diuretic and serviceable for the piles and other hæmorrhages.

Species II. *Biting Stonecrop*, *S. Acre*. Rocks, walls, and sandy places, not common in this district. June. Stem 1—3 inches high, tufted, branched, decumbent, smooth, round, leafy. Leaves alternate, *ovate*, fleshy, gibbous, produced at the base, sessile. Flowers erect bright yellow, in *terminal*, solitary panicles. Very acrid *when chewed*.

Species III. *Hairy Stonecrop*, *S. Villousum*. Frequent on wet moors and by road sides. June, July. Road side near Hawksland Lesmahagow; at Highflat and Rigfoot Kilbride; road side near Airdrie; on Mearns Muir abundant &c. Stem upright 3—5 inches high, of the same reddish or purplish red colour as the leaves, branched at bottom. Leaves alternate, oblong, fleshy, flatish above, convex beneath, more or less downy. Flowers pinkish white or rather white with a purplish rib, on an axillary downy peduncle, few in number, forming a lax corymb.

Species IV. *Reflected Stonecrop*, *S. Reflexum*. Walls and rocks, rare. July. On the top of a wall at Craignethan Castle. Stems 6—8 inches high, ascending, branched at bottom, sterile branches with thickly placed leaves, often reflexed. Leaves fleshy *awl-shaped, spread, glaucous, crowded, lengthened out* at bottom. Flowers numerous, bright yellow, terminal often of 6 petals and 12 stamens, in a large yellow cyme. Biting, used in salads along with lettuces.

GENUS IX. WOOD-SORREL, *Oxalis*. Calyx 5-parted—petals 5—seed-vessel short, oblong, 5-sided, 5-celled—cells 1 or many seeded.

Species I. *Common Wood-sorrel*, *O. Acetosella*. Common in woods. May. In a

wood between Barncluith bridge and Silver-tonhill ; plantation to the west of Woodhall garden, abundant &c. Stem none—flower bearing stalk or scape 2—4 inches high, all from the ground, bracteated above the middle. Leaves in threes, *reverse-heart-shaped*, on slender peduncles, hairy, bright green, sometimes purplish. The flower-stalks above mentioned are *longer* than the leaves, and each bears *one* delicate, drooping, inodorous flower, the petals of which are blush-coloured, veined with purple. The juice contains much oxalite of potash, which renders it gratefully acid. Leaves in infusion cooling, are often eaten, and make an agreeable whey. The “essential salt of Lemons” of the shops is prepared from this plant.

Species II. *Horn or Yellow Wood-sorrel*, *O. Corniculata*. Found as a weed clinging to the roots of other plants about Barncluith and Clauds burn. June, October. Stem roundish, reddish, 6—8 inches high, *branched, trailing, rooting*. Leaves in threes, reverse heart-shaped, hairy. Flowers small, yellow, single or 2 together, upon pedicels with 2 minute bracteas at their base—seed-vessel large oblong, cells many seeded. *This is scarcely an indigenous plant.*

GENUS X. LYCHNIS, *Lychnis*. Calyx *tubular 5-toothed*—petals 5-clawed, the

limb divided—seed-vessels 1-celled or apparently 5-celled.

Species I. *Ragged Robin*, L. *Flos-Cuculi*. Common in damp fields. July. Barncluith green; field at Wood Yett; moist places by the road side between Bothwell bridge and Bellshill &c. Stem 1—2 feet high, somewhat angular and grooved, swelled at the joints, purplish, somewhat viscid towards the summit, branched only towards the base. Leaves glabrous, linear lanceolate, opposite, connate at the base. Flowers pink or purplish red, rarely white—petals 4-cut, crowned, flaccid, often become double—seed-vessel roundish.

Species II. *Red Campion*, L. *Dioica*. Very common in fields and hedges. May, to September. By Barncluith burn &c. Herb rather villous. Stem 1—2 feet high, kneed, upright, a little clammy above the joints. Leaves lanceolate, hairy, sessile. Flowers rose coloured or pure white—some with stamens only, others and on different plants with pistils—calyx of the stamen bearing flowers elliptical, club-shaped, 10-ribbed, veinless—of the pistils ovate with intercostal veins. This is a very common plant, but is apt to perplex the young botanist; by far the greater number of plants here, having 10 stamens with no appearance of the female organs.

GENUS XI. COCKLE, *Agrostemma*. Calyx of one leaf, tubular, 5-toothed—petals 5-clawed, crowned at the mouth, their limb divided—seed-vessel opening with 5 or more teeth, 1 or 5-celled.

Species I. *Corn Cockle*, *A. Githago*. Common among wheat. June, July. Allington haugh; at Broomhouse toll; Lesmahagow abundant &c. Herb hirsute. Stem 2—3 feet high, rounded, branched, branches spreading, hairy, hairs upright, pressed to the stem. Leaves opposite linear lanceolate. Flowers large, terminal purple—calyx 10-ribbed, with 5-teeth, which are twice as long as the blossom. A common plant in corn fields, along with poppy and blue bottle, enlivening them at the expense of careless husbandmen.

GENUS XII. MOUSE EAR CHICKWEED, *Cerastium*. Calyx 5-leaved—petals 5-cloven—seed-vessel bursting at top with 10 teeth.

Species I. *Broad-leaved Mouse ear Chickweed*, *C. Vulgatum*. April, to June. Very common on road sides, among rubbish, and in meadows. Herb light green, *clammy*, *hairy*. Stem 6—10 inches high, in tufts, forked, branched especially at the base, the centre stem generally upright, the others mostly ascending. Leaves *ovate blunt*, or *roundish* with a minute point, yellowish green. Flowers white in dense terminal

heads or clusters—peduncles very short upright—leaves of the calyx acute about as long as the blossom.

Species II. *Narrow-leaved Mouse ear Chickweed.* Abundant in fields and on walls. May to September. Herb dark green, hairy, viscous, diffused. Stems 6—16 inches long, ascending, branched at bottom, covered with hairs, each of which is tipped with a gland exuding a viscid substance, or juice. Leaves *lanceolate oblong*, rather blunt. Flowers white—petals the same length as the calyx—peduncles viscid twice as long as the flower—divisions of the calyx margined—seed-vessel like the last. The best marks between this and the former are drawn from the form of the leaf.

Species III. *Water Chickweed, C. Aquaticum.* Watery places. July. By the Clyde &c. Plant hairy. Stem 1—2 feet long, weak, branched, viscid upwards. Leaves *heart-shaped*, upper ones sessile. Flowers white—petals deeply 2-cleft as long as the calyx—peduncles lateral solitary, when fruit bearing turned back—seed-vessel ovate 5-toothed. Bearing a considerable resemblance to *Stellaria Nemorum*.

GENUS XIII. SPURREY, *Spergula.* Calyx 5-leaved—petals 5 undivided—seed-vessels ovate, 5-celled, 5-valved.

Species I. *Corn Spurrey*, *S. Arvensis*.
 Frequent in corn fields. August. Field
 about Allington &c. Stems numerous 6-
 12 inches high, swelling at the joint.
 Leaves narrow, linear, rounded, glabrous
 or a little pubescent, of two bundles from
 each joint, spreading in a whorled man-
 ner. Flowers many in a panicle—petals oval
 white rather longer than the calyx—stamens
 often 5. Cultivated in many countries.

Species II. *Knotted Spurrey*, *S. Nodosus*.
 Rare in this district. July, August. Up-
 perbank at Wrangham Loch near Holytown.
 Plant slightly tufted glabrous. Stems 1-
 spreading or suberect, branched and decur-
 bent at the base where the leaves are $\frac{3}{4}$ of an
 inch long, but gradually becoming smaller
 upwards. Leaves subulate, connate, gla-
 brous, opposite, lower ones sheathing, upper
 ones bearing clusters of young leaves.
 Flowers few, terminal, large for the size of
 the plant, white, longer than the nerves of
 calyx—petals obovate, obtuse.

CLASS XI.

CONSISTING OF PLANTS HAVING FROM 11 TO
19 STAMENS IN EACH FLOWER. ORDER
2D. TWO PISTILS ALONG WITH THE ABOVE
NUMBER OF STAMENS, DIGYNIA.

GENUS I. LOOSESTRIFE, *Lythrum*. Calyx inferior with 12 teeth—petals 6 inserted on the calyx—seed-vessel oblong, 2-celled.

Species I. *Purple-leaved Loosestrife*, *L. Salicaria*. Marshy places, rare here. Clinkerthill Rutherglen &c. Stem 2—3 feet high, upright, stiff, 4-sided, tinged with red. Leaves opposite *heart-shaped, lanceolate, opposite*, or in whorls of 3 or 4, downy beneath, smooth above. Flowers red-purple, in clusters, placed at a little distance from each other in a whorled manner each consisting of about 8 flowers (each with 12 stamens,) forming a *long leafy spike*. Used in dysentery, and in obstinate diarrhaeas.

GENUS II. AGREMONY, *Agremonia*. Calyx 5-lobed, bristly, defended by another calyx like an appendage, at its base—petals 5 inserted on the calyx—pericarps 2 in the bottom of the calyx.

Species I. *Common Agrimony*, *A. Eupatoria*. Frequent in woods, shady places, and edges of fields. July. At Crossbasket, Frame, on the Clyde about Dalserf, by a walk leading from Bothwell Castle to the Cottage &c. Stem 1—2 feet high, angular, hairy. Leaves alternately *pinnate*, leaflets ovate, oblong, deeply serrated, terminal leaflets with *leaf-stalks*. Flowers yellow, almost sessile, on a long branched spike which tapers much towards the top—fruit hispid. Used for jaundice, diabetes, and as a cataplasm in contusions and fresh wounds.

ORDER III. TRIGYNIA. 3 pistils in each flower along with the above number of stamens.

GENUS III. MIGNONETTE, *Reseda*. Calyx of one leaf divided—petals lacinated—seed-vessels of one cell opening at top.

Species I. *Dyers weed*, *R. Luteola*. Frequent by river sides and waste places. July. East Quarry Rutherglen, on the Clyde below Hamilton Bridge, above Ross wood and above Cunningar &c. Stem 1—3 feet high, erect, stout, furrowed or angular, branched. Leaves *lanceolate*, *waved*, *not cut*, alternate, glabrous, shining green. Flowers yellowish, numerous in a bracteated spike—middle petal 4-cut, side petals entire or 3-cut—calyx 4-cut—nectary crenated. **This plant affords a yellow dye much used;**

also used to make a yellow paint called Dutch pink; on rich soils the stem becomes hollow and contains less colouring matter.

GENUS IV. EUPHORBIA, *Euphorbia*. Perianth single, of one leaf, inferior—nectaries 4—5 inserted upon the perianth—seed-vessel pedicelled, 3-lobed.

Species I. *Petty Spurge*, E. Peplus. Frequent in gardens, cornfields and waste places. July, August. Gardens about the Manse at Black's well, at Jerviston &c. Whole plant of a pleasant light green colour, or tinged with purple, 6—10 inches high, somewhat branched at the base. Leaves obovate, entire, on very short petioles, glabrous. Umbels forked pretty constantly of 3 primary rays—flowers yellow, small—partial involucre ovate entire—nectaries crescent-shaped, horned. The milky juice is very acrid and is used for destroying warts.

Species II. *Sun Spurge*, E. Helioscopia. Frequent in corn fields and gardens. August. Stem upright, 6—12 inches high, round, slightly hairy upwards, having opposite branches at bottom. Leaves wedge formed, serrate, bright green, scattered, glabrous. Umbels of 5 forked rays, partial involucre obovate, and as well as the wedge-shaped leaves serrate—filaments 14, 2, 3, or more visible at a time—all the

flowers have stamens and pistils. Called Devil's Kirnstaff and Little-good ; 'the milky acrid juice used as in the above species.

Species III. *Caper Spurge*, E. *Lathyris*. Near the Coach House on Barncluith green. June, July. Stem upright, succulent, 2—4 feet high, upper part *dichotomous*. Leaves *opposite*, sessile, smooth, quite entire. Flowers in Umbels, of a greenish yellow colour—an umbel comes out for each division, that in the first division being the largest, and those in the upper the smallest. A native of France and Italy but like many other plants in the Scottish flora it has escaped from the garden and is now found wild in various places about Hamilton.

ORDER IV. DODECAGYNIA, *i. e.* 12 pistils in each flower along with the stamens.

GENUS V. HOUSE LEEK, *Sempervivum*. Calyx 12-cleft—petals 12—seed-vessels 12.

Species I. *Common House Leek* or *Fouet*. *S. Tectorum*. Frequent on walls and house tops. July. Plant propagated by runners which terminate in dense tufts of fleshy leaves in the form of a full blown double rose. Flowering stem 8—12 inches high, round, fleshy pubescent. Leaves extremely *succulent*, *ciliated*. Flowers in a corymb of 2 or 3 racemose branches, numerous, clustered, upright, pubescent, flesh coloured, all *growing* one way—stamens 24 in number,

the 12 fertile ones at the base of the petals, the other 12 which are abortive alternate with the petals. The leaves bruised or mixed with cream are applied to burns.

CLASS XII.

ICOSANDRIA CONSISTS OF PLANTS WHICH HAVE NUMEROUS STAMENS, ABOUT 20, OR MORE INSERTED INTO THE CALYX—NOT INTO THE RECEPTACLE.

This indicates almost infallibly that the pulpy fruit which accompanies it, is wholesome. Examine an apple, pear, plum, cherry, sloe or hawthorn blossom, and you will observe how the stamens are inserted in this class.

ORDER I. ONE STAMEN MONOGYNIA.

GENUS I. PLUM AND CHERRY, *Prunus*.
Calyx inferior 5-cleft—petals 5—stone of the plum or cherry with prominent seams.

Species I. *Bird Cherry or Hagberry*, *P. Padus*. Frequent in woods and by water sides. May. Clyde above Cunningham; on the Calder between Crossbasket and Gilburnsynk &c. A shrub or small tree with a smooth bark. Leaves alternate, rather glaucous, *obovate*, doubly serrated, decidu-

ous, with 2 *glands* or roundish bodies at the base, veiny, smelling like Rue. Flowers white, in *pendulous racemes*, numerous smelling strongly—petals finely serrated—fruit oval, dark purple or black, bitter. Bark used in Syphilis, and the fruit in decoction for dysentery.

Species II. *Wild Cherry or Geen*, P. *Cerassus*. Abundant in woods. May. Woods by the Avon, at Ross, at Glenhove New Monkland &c. A pretty large tree. The branches ash coloured, shining, roundish. Leaves *ovate* or ovate-lanceolate, glabrous above, more or less downy beneath, doubled together when young—petioles with 1 or 2 glands near the end (sometimes none.) Flowers delicate white, large, somewhat drooping, in nearly sessile umbels of few rays—each blossom on a long stalk—calyx at length reflexed—fruit red, justly celebrated for its agreeable and acid flavour. The origin of the garden cherry said to have been first introduced in the reign of Henry VIII.

Species III. *Wild Plum-tree*, P. *Domes-tica*. Frequent in woods and Hedges. April. Peduncles subsolitary; leaves lanceolate-ovate convoluted, branches without thorns. A middling sized tree of which I give only the specific discription. The

cultivated garden plums are derived from this species.

Species IV. *Bullace Tree*, P. *Insitia*. On the Farm of Chapel and elsewhere. May. Peduncles in pairs; leaves lanceolate-ovate, convoluted, villose underneath; branches terminated by a thorn. Rather an humble tree. The fruit is black, globular, with a blue bloom, very austere, but so tempered with sweetness and roughness, as not to be unpleasant. A conserve is prepared from it.

Species V. *Blackthorn or Sloe*, P. *Spinosa*. Abundant in woods and hedges especially in Ross wood. April, May. Peduncles solitary; leaves lanceolate, smooth; branches thorny. A well known bush. One of the most powerful of the acerb fruits, and an excellent astringent. The juice of the berry enters largely into the British manufacture of *Port* wine, in the same way that the leaves have been discovered to form so large a part of what we call Chinese Tea.

ORDER II. DIGYNIA, two pistils along with the stamens.

GENUS II. HAWTHORN, *Crataegus*. Calyx superior 5-cleft—petals 5—fruit (haws) pulpy, with from 2—5, 2-seeded nuts.

Species I. *Hawthorn Tree*, C. *Oxyacantha*. Woods and hedges almost everywhere. June. Stem spinous; leaves

smooth 3-cut, lobes pointed serrated; flowers corymbose white or reddish; peduncles and calyx downy, calyx segments lanceolate, pointed, reflected. There are many varieties of the thorn most of which flourish in May, but the Glastonbury variety flowers in January and February, or even so early as Christmas day. The wood is tough, and the old roots are excellent for making boxes or combs. The Germans call it *hagedorn*; the Danes *hagetorn*; and the Swedes *hagtorn*; whence the English name *hawthorn*.

GENUS III. PEAR, *Pyrus*. Calyx 5-cut—petals 5-cut—apple with from 2—5 cells—cells generally 2-seeded.

Species I. *Crab-apple*, *P. Malus*. Common in woods and hedges. May. Hamilton wood abundant; hedge between Tuppall and Fairhill &c. A small tree. Leaves ovate serrated; flowers in a simple sessile umbel delicate white tinged with rose colour. Origin of the garden Apple. Wood hard, takes a good polish; bark dyes yellow; juice of the fruit called verjuice, very acerb, astringent, repellent, and useful in sprains.

Species II. *Common Pear*, *P. Communis*. On the banks of the Avon below Chatelherault. April. A lofty tree, upright—branches dependent spinous; leaves ovate *serrated* blunt, when young covered with a

deciduous down; flowers in terminating villose corymbs—flower-stalks *corymbose*—blossoms snow white—stipules linear. This tree has not as yet been admitted into the Scottish Flora, but as it has found a place in the Flora of the other end of the Island it may as well be admitted here also, as it grows abundantly in the above station. This is the parent of the cultivated pear.

Species III. *Roan-tree or Mountain Ash*, *P. Aucuparia*. Abundant in woods. May, June. A small handsome tree. Leaves pinnate, glabrous on both sides; flowers corymbose, white, small numerous, odour considerable—fruit (or roans) orange red, size of a pea, acid and austere. A new sort of spirit has lately been prepared from the fruit by distilling them along with some charcoal. Wood solid, soft, tough, used by the credulous to prevent witchcraft.

Species IV. *Beam-tree*, *P. Aria*. Coach road near Chatelherault; by Mr Mathers walks at Meikle Earnock. June. A small tree variable in habit according to situation and remarkable for the white mealiness or close down on the under side of the leaves, flower-stalks and calyx. Twigs tornentose; leaves simple, ovate, cut, serrate, tornentose beneath with prominent veins—veins parallel; flowers in a flatish *corymb*, white—styles 2—4—fruit red, flowry, astringent,

eatable when rotten ripe. Timber tough, smooth, hard; charcoal used for gunpowder.

GENUS IV. SPIRAEA, *Spiraea*. Calyx inferior 5-cleft—petals 5—seed-vessels 3—12, 1-celled, 2-valved—seed 1—3 in each cell.

Species I. *Willow-leaved Spiraea*, *S. Salicifolia*. Banks at Cartlane Craigs; plantation behind the Manse at Shotts. July. A bushy shrub from 2—4 feet high, with smooth rod-like stems, and yellow branches; leaves oblong, serrate, smooth; flowers in decompounded racemes,—blossoms of a rose red colour, paler when expanded. Ornamental in gardens.

Species II. *Dropwort*, *S. Filipendula*. At the bottom of the wall called “Lovers leap” at Chatelherault. July. Root with rather long tubers or solid lumps, hanging from the main body by threads; whence the common name. Stem 8—12 inches high, branched upwards and paniced, herbaceous. Leaves interruptedly *pinnate*, (somewhat broken-like)—leaflets uniform, ovate-oblong, or lanceolate, *serrated*, with small intermediate ones. Flowers paniced, yellowish white, tipped with rose colour, pinkish before expanding, by no means crowded. In gardens it often becomes very luxuriant producing double flowers.

Species III. *Meadow-sweet or Queen of the Meadows*, *S. Ulmaria*. Frequent in damp fields and pastures. June, July. In a marshy place behind Ross House; on the Avon between Avon bridge and Haugh-head &c. Stems erect 2—4 feet high, angular and furrowed, tinged with red, leafy, branched upward. Leaves interruptedly pinnated, dark green above, beneath clothed with a white down—terminal leaflets 3-lobed—side leaflets undivided. Flowers yellowish white, numerous, sweet scented, in (proliferous) corymbs, 2 lateral branches usually rising in a proliferous manner from the first cyme—styles 6—8. An infusion of fresh gathered tops of this plant promotes swelling, and a water distilled from them is good for inflammation of the eyes.

ORDER III. POLYGYNIA, many pistils along with the stamens.

GENUS V. ROSE, *Rosa*. Calyx fleshy, urceolate, 5-cleft at its summit—pericarps many, hairy, included in the (hip) calyx—receptacle villose.

Species I. *Apple Rose*, *R. Villosa*. At Crossbasket. June. Stem 8—10 feet high—sometimes forming a large tree, with a trunk as thick as a man's arm. Leaves elliptical obtuse, doubly serrate, upper pair and odd leaflet largest, hirsute on both faces, above very soft, beneath wrinkled, glandular

near the edge. Flowers concave deep red, rarely white with blood red spots, or reddish—calyx lobes simple—thorns nearly straight equal—bracteas elliptic—fruit nearly globose, bristled, red.

Species II. *Sweetbriar*, R. *Rubiginosa*. Frequent in hedges. June. At Jerviston &c. Bush much branched 3—4 feet high, thorns *unequal, large, hooked, scattered*, (those of the root shoots unequal)—leaflets hirsute, glandular, beneath doubly serrated, serratures glandular, glands odoriferous—upper pair of leaflets and odd one largest. Flowers concave, petals pink—styles distinct—fruit reverse ovate, armed with strong bristles at the base, when ripe blood red. The Eglantine of the Poets.

Species III. *Briar-bush or Dog-rose*, R. *Canina*. In woods and hedges almost everywhere. June, July. Shrub spreading 5—8 feet high; leaflets narrow, elliptic, *keeled, serrated, smooth*, upper pair and odd leaflet largest—serratures pointed unequal, the young leaves shining as if varnished; flowers reddish, rarely white, the buds redder than the expanded flower—fruit or hip elliptic, smooth, shining, scarlet. Rose-water distilled from the flowers of the Dog-rose, is said to be much more fragrant than that from garden roses. The bedeguar gall resembling a mossy protuberance (common on

various parts of this bush) is the workmanship of the bedeguar-insect, *Cynips Rosæ*.

Species IV. *White Field Rose*, *R. Arvensis*. In hedges. June, July. About Bogle's hole &c. Bush 4 feet high—branches flagelliform, slender, dull, glaucous, purple, prickles falcate or roundish *elliptical*, unequally serrated, lowest pair smallest, flat, inclining to crenate, smooth on both sides, very glaucous beneath, mainrib sometimes hairy beneath. Flowers 1—15 white, quite flat—petioles pubescent, with scattered glands and little falcate dorsal prickles—peduncles rough with glands, few prickles—fruit scarlet, round or oblong, of a fine flavour. The rose seems to belong exclusively to the northern hemisphere, all those yet known being found between the 19th and 70th degrees of N. latitude. The roses have lately been new arranged and illustrated by Mr Woods and Mr Lindley.

GENUS VI. BRAMBLE, *Rubus*. Calyx 5-cleft—fruit superior, composed of many single seeded juicy drupes.

Species I. *Rasp-berry*, *R. Idaeus*. Frequent in woods. June. Hamilton wood opposite Silvertonhill &c. Stems 2—4 feet high *upright*, round, acutely hispid or prickly. Leaves in fives, pinnate—upper leaves ternate—leaflets rhomboid ovate. very *downy* beneath, foot-stalks *channelled*.

Flowers in panicles—petals small, white—fruit odorous, blood coloured when wild. The fruit was anciently called *Raspis*, whence the common name. The juice like that of the strawberry dissolves the tartar of the teeth. The fresh leaves are the favourite food of kids.

Species II. *Common Bramble*, *R. Fruticosus*. Abundant in waste places and hedges. July. Stem woody, tough, with prickles on the angles—prickles hooked, dilated at bottom, compressed, conical. Leaves in fives (sometimes in threes)—leaflets petiolate, dark green, woolly beneath, rough, blunt with a point. Flowers in a racemed panicle, numerous—petals white—berry of numerous crowded grains, of a violet black when ripe, with a sweet mawkish taste. The whole plant is of an astringent nature. The green twigs are of great use in dying woollen, silk or mohair, black. About Hamilton the berries are called *blackblutters*, a name, as far as I can discover, perfectly local; they are also called *blackbides*, *bumblekites* and *scaldberries*.

Species III. *Hazel-leaved Bramble*, *R. Corylifolius*. Hedges and borders of fields, occasionally. July. Hedge at Torbet's orchard; about Jerviston: banks of the Clyde about Carmyle &c. Stems very long (18—20 feet) trailing, *brittle*, *diffused*,

prickly—prickles placed *promiscuously*, *straitish*, slender, unequal. Leaves usually in fives—leaflets *ovate*, rather hairy, wrinkled, soft beneath—side leaflets sessile. Flowers in a weak panicle—petals white, waved, concave—calyx reflexed after flowering—fruit earlier, of a brownish black colour, composed of fewer acini or grains and of a more gratefully acid taste than the last species.

Species IV. *Stone Bramble*, *R. Saxatilis*. June. Top of a rock by the railway nearly opposite Cadzow Castle; among hazel bushes a little above Calderwood; Cleghorn wood, and Bonnington near Lanark. The herb is from 8—10 inches high, of a slender delicate habit, light green, slightly downy. Root fibrous. Runners or barren stems hairy, creeping, herbaceous, unarmed, simple, producing 2 or 3 leaves on longish leaf-stalks. Leaves 3, slightly downy, broadly ovate, doubly serrate, pale green, the lower ones sometimes in fives, side ones sessile. Flowers in a panicle, 3 or 4—petals minute, narrow, greenish yellow—calyx spreading, segments lanceolate—fruit of a beautiful pink colour, when ripe of an agreeable acid flavour, composed of 1, 3 or 4 large acini or grains. The berries are called Roebuck-berries. The Russians ferment

them with honey, and extract a potent liquor or spirit from them.

Species V. *Cloud-berry*, *R. Chamæmorus*. Estate of Dalblair near Muirkirk; Cleg-horn and Bonnington woods with the former species. July. This plant has an elegant appearance. Root creeping. Stem 6—10 inches high, *herbaceous*, without *prickles*, bearing 2 or 3 leaves and 1 flower. Leaves *simple*, roundish, *5-lobed*, cordate—shaped like those of the Mallow. Flowers on long stalks, large, solitary, white—calyx lobes ovate—fruit of a tawny dull orange colour, composed of many acini or grains, acid, mucilaginous and not unpleasant. Berries antiscorbutic; when made into tarts they taste like Tamarinds.

GENUS VII. *TORMENTIL*, *Tormentilla*. Calyx 8-cleft, segments alternately smaller—petals 4—pericarps roundish fixed to a small dry receptacle.

Species I. *Common Tormentil*, *T. Officinalis*. Common in barren and heathy places. June, July. Barncluith green; banks of the burn opposite Mount Grove &c. Root very large and woody, red within. Stem mostly *upright*, *forked*, branched, weak 6—8 inches long. Leaves in *threes*, all *sessile* (especially the stem ones)—leaflets rather *lanceolate*, oval, deeply toothed, somewhat *hairy*. Flowers rather small, golden yellow,

on long terminal axillary pedicels, drooping before expansion—petals sometimes 5—calyx segments rarely 3, 5 or many. A powerful astringent, very efficacious in the dysenteries and fluxes of cattle. In the Highlands the roots are used to tan leather.

Species II. *Trailing Tormentil*, T. Rep-tans. A rare plant, but common in the vicinity of Hamilton. June, July. Road side near Springwell Inn; hedge root near Hamilton bridge, and by the road leading down to Logans—the orchard and fields by the office houses at Jerviston abound with it. The whole herb hairy and of a light green. Root small and slender. Stems few, slender, *threadlike*, a foot or more long, *trailing*, but not rooting. Leaves on *leaf-stalks*, in threes, wedge-shaped, reverse ovate, deeply toothed at the top. Flowers bright yellow, twice as long as in the common sort—petals wedge-shaped, reverse heartshaped, nearly twice as long as the calyx—peduncles solitary, long—calyx lobes ovate, equal—bractees linear lanceolate.

GENUS VIII. CINQUEFOIL, *Potentilla*. Calyx 10-cleft. segments alternately smaller—petals 5—pericarps as in *Tormentilla*.

Species I. *Goose Cinquefoil* or *Silver-weed*, P. Anserina. Abundant in pastures and by roadsides. June, July. Roadside between Hamilton and Clyde bridge &c. Stems

creeping, rooting at the joints, and throwing up leaves and a solitary peduncle from the same point. Leaves interruptedly *pinnated*, (nearly lyrate) silky, silvery white beneath, both sides silky when young—leaflets acutely serrated. Flowers large yellow, on *solitary*, axillary, single flowered stalks—calyx silky. The leaves resemble those of wild Tansey, are mildly astringent, and are used instead of Peruvian bark in agues. The roots eat like parsneps.

Species II. *Creeping Cinquefoil*, *P. Repens*. Hamilton haugh nearly opposite Logans, and on the Clyde near Dalbeth. August. Stems slender, long and *creeping* like runners, reddish rooting at the joints. Leaves in fives, acuminate—leaflets reverse oval, wedge-shaped, *serrated*, smooth above, beneath hairy on the ribs. Stipules lanceolate, sometimes slightly toothed. Flowers large yellow, stalks taller than the leaves—petals reverse heart-shaped as long as the calyx—bracteas lanceolate equal to the calyx lobes. A few leaves and flower-stalks are thrown up from the joints of the creeping stem.

Species III. *Barren Strawberry*, *P. Fragaria*. Woods, banks and dry pastures. March, April. Hedge banks between Camp bleachfield and Riccar-Johnston &c. *Stems* thread-shaped, lying down, 2—3

inches long, hairy, covered with brown scales. Leaves in threes—leaflets reverse oval, deeply serrated, silky, silvery, white underneath, stalks very hairy. Flowers white—petals *roundish* frequently emarginate, *as long* as the calyx—flower-stalk long, one flowered, with a leaf in the middle from which springs another flower. The term *barren* is not given to this species because it does not produce perfect seed, but because the receptacle is not fleshy and eatable.

GENUS IX. STRAWBERRY, *Fragaria*. Calyx tube concave, 10-cleft, segments alternately smaller—petals 5—pericarps inserted upon the strawberry.

Species I. *Wood Strawberry*, *F. Vesca*. Frequent in woods. May—July. About Fairholm &c. Calyx in fruit reflexed; hairs of the leaf and flower-stalks very much turned back—leaves equally serrated—flowers rather corymbose—fruit red, drooping. The bark of the root is astringent. The berries are fragrant and juicy, and are particularly esteemed as of use in consumption, gravelly complaints, and incrustations on the teeth.

Species II. *Hautboy Strawberry*, *F. Elatior*. On an old wall in the Orchard at Jerviston. June—October. Calyx in fruit reflexed; hairs on the leaf and flower-stalks

very spreading ; plant often diœcious ; fruit large—odorous like musk, in high esteem. Cultivated.

GENUS X. *AVENS*, *Geum*. Calyx 10-cleft alternate, segments minute—petals 5—pericarps with a long kneed awn.

Species I. *Common Avens*, *G. Urbanum*. Frequent in woods and hedges. June. Lead Side by the Washing green &c. Stems 1—2 feet high, nearly upright, somewhat flexuose, slightly angular, hairy, branched upwards. Leaves very variable—root ones lyrate pinnate—stem ones in threes. Flowers upright terminal, solitary, small, yellow—petals shorter than the calyx—awns of the fruit hooked. The roots flavour ale and prevent it from turning sour ; are stomachic and a good substitute for the Peruvian bark in agues.

Species II. *Water Avens*, *G. Rivale*. Frequent in fields and damp woods. June, July. On both sides of the railway in the Duke's wood &c. Stem about a foot high, upright, round, and branched, bending at top, but becoming erect as the fruit ripens. Leaves deeply serrated—radical ones interruptedly lyrate pinnate—stem ones in threes or simple. Flowers dull pinkish orange, *drooping*—petals reverse heart-shaped, as *long* as the calyx—awns feathered twisted. ~~Good~~ as the former species.

GENUS XI. MARSH CINQUEFOIL, *Comarum*. Calyx 10-cleft—petals 5 less than the calyx—seeds naked, even, on the surface of a spongy, hairy permanent receptacle.

Species I. *Marsh Cinquefoil, C. Palustre*. Frequent in bogs and marshes. July. Deadwaters Ross &c. Stems ascending 6—12 inches long, herbaceous, branched, smooth. Leaves lanceolate, serrated above, woolly beneath, sometimes in sevens, from the joints of the stems. Flowers paniced, blackish purple—petals pointed, very small—calyx coloured. The woody root sends out many black fibres which penetrate deeply into boggy ground. The root dyes red.

CLASS XIII.

POLYANDRIA CONSISTS OF PLANTS HAVING UPWARDS OF TWENTY STAMENS STANDING UPON THE RECEPTACLE INSTEAD OF GROWING FROM THE SIDES OF THE CALYX AS IN THE XII. CLASS.

Most of the plants in this class are noxious or unwholesome.

ORDER I. MONOGYNIA, one pistil along with the stamens.

GENUS I. CELADINE, *Chelidonium*. Calyx of 2 leaves—petals 4—pod 1-celled—seeds crested.

Species I. *Great Celadine*, *C. Majus*. Not uncommon in hedges, shady places, upon walls, and among rubbish. May, June. Hedge roots between Hamilton and Barncluith and between Hamilton and Covant burn; root of a hedge by the road leading from the Farm house of Ross to the Clyde; root of a hedge at Avon Mill; about Craignethan &c. Stem 1—2 feet high, branched, erect, rounded, a little hairy. Leaves pinnate—lobes blunt, notched, smooth, slightly glaucous somewhat like the leaves of Columbine. Flowers on long stalked umbels, yellow, rather small—calyx deciduous, slightly hairy—pod long, linear, 1-celled, 2-valved, somewhat turgid. The plant is full of an orange coloured or yellow acrid juice, which destroys warts and is used for tetters, ringworms, the jaundice, and the itch: diluted with milk it consumes white opaque spots on the eyes.

GENUS II. POPPY, *Papaver*. Calyx of 2 leaves—blossoms of 4 petals—seed-vessel of 1-cell, opening by holes under the stigma.

Species I. *Doubtful Poppy*, *P. Dubium*. Occasionally in sandy fields. July. About Strathaven, Bogle's hole &c. Stem 1—2 feet high, slightly branched, many flowered,

hairy—hairs *spreading*. Leaves pinnatifid, gashed (or bipinnatifid) the segments broad. Flowers large—petals pale scarlet—stamens linear—pollen yellow—bristles on the flower-stalks, *close pressed*—seed-vessels *oblong* glabrous.

Species II. *Wild Poppy*, P. Rhœas. Frequent in corn fields. July. At Smiddy-croft &c. Stem about the same size as the last, many flowered, hispid, upright, round, branched, purplish at bottom, with *spreading* hairs, bulbous at the base. Leaves pinnatifid, gashed, hairy—hairs of the peduncles patent. Flowers large—petals dark scarlet, sometimes with a black spot at the base—seed-vessels glabrous nearly globular. This is a common weed. The capsules contain a milky juice of a narcotic quality, which is considered by some foreign physicians to be superior to opium. The petals communicate a fine red colour to water or syrup.

GENUS III. CISTUS, *Helianthium*. Calyx 5-leaved, 2 smaller than the rest—petals 5—seed-vessel 1-celled, 3-valved.

Species I. *Dwarf Cistus*, H. Vulgare. Pastures New Monkland and Avondale, and by the Mouse at Cartlane Craigs. July, August. Stems 3—6 inches high, rather *shrubby*, trailing many from the same root. Leaves elliptical oblong, opposite slightly rolled back, hoary or clothlike beneath.

Flowers in racemes gold yellow, rarely lemon coloured, white or rose coloured—petals roundish, very deciduous—stamens bending down as soon as touched—calyx of 3 large and 2 small leaves—stipules lanceolate, fringed. This is also known by the name of *Cistus Helianthimum*; and in English it is called Rock Rose and Little Sun flower.

GENUS IV. LINDEN OR LIME, *Tilia*. Calyx 5-parted, deciduous—seed-vessel 5-valved, opening at the base, coriaceous.

Species I. *Linden or Lime-tree*, *T. Europæa*. Frequent in hedges and plantations. July. Flowers destitute of a nectary; pericarp ribbed, thick, woody, top-shaped; leaves heart-shaped, roundish, pointed, unequally serrated. A large tree, with smooth, spreading, round branches; green when tender but afterwards brown. The wood is soft, without knots, and is used for turning.

GENUS V. WATER LILY, *Nymphæa*. Berry many-celled, with a bark-like coat—calyx 4—5 leaved, larger than the petals—petals inserted into the germen—stigma bearing the nectary.

Species I. *White Water Lily*, *N. Alba*. Frequent in Lakes and stagnant waters. Loch in the parish of Shotts, and in the *Lochs* to the north of Old Monkland parish.

July. An elegant aquatic. Leaves *heart-shaped*, smooth beneath, edge not cut, large, floating—leaf-lobes imbricated, roundish. Flowers large and conspicuous, white, floating—petals 16—24 in number, in 2 or 3 rows, wider than the leaves of the calyx, and more ovate—leaves of the calyx 4 white within—outer stamens yellow dilated—stigma 16-cleft, recurved. The horizontal bulbous root dyes dark brown, and is sometimes made into bread.

GENUS VI. YELLOW WATER LILY, *Nuphar*. Calyx 5—6 leaved—petals inserted with the stamens into the receptacle, and bearing honey at their backs—berry many-celled.

Species I. *Yellow Water Lily, N. lutea*. In the same stations with the last species. **July.** Leaves blunt, smooth, edge not cut but turned up a little, large, floating, bright green above, paler beneath, with branched raised nerves or veins. Flowers large, yellow, 2 inches in diameter—petals smelling like brandy—calyx 5-leaved—stigma entire. Equally conspicuous with the former. The roots are poisonous to crickets and moles; and the infusion is useful in leprosy.

ORDER II. TRIGYNIA, Three pistils in each flower along with the stamens.

GENUS VII. MONK'S HOOD, *Aconitum*. No calyx—petals 5, the highest arched,

shaped like a hood or helmet—nectaries 2—peduncle recurved—capsules 3 or 5.

Species I. *Common Monk's Hood*, *A. Napellus*. A native of Siberia and Switzerland, but not uncommon in wild places about Hamilton; and often far from houses or gardens. May, June. Plantation below Hamilton bridge: burnside near Gour's Linn Quarry; wild banks of the Avon near Barncluith, abundant. Stem 2—4 feet high, erect, firm, covered with leaves. Leaves shining, 5-parted—segments 3-parted, cut, linear, broader above and scored with a line. Flowers blue (sometimes yellow or white)—the uppermost of the five petals shaped like a hood has a straight obtuse spur, and a lanceolate ascending bifid lip. This plant is a most deadly poison, a criminal having been put to death by taking one drachm of the root.

ORDER III. PENTAGYNIA, Five pistils in each flower along with the stamens.

GENUS VIII. COLUMBINE, *Aquilegia*. Calyx 5-leaved, deciduous, coloured, petal-like—petals 5, two lipped, produced behind into spurs.

Species I. *Common Columbine*, *A. Vulgaris*. Ruins at Bothwell Castle; shady walk at Jerviston; Orchard at Barncluith; Rocks at Corhouse; Clyde at Blantyre Priory. Stems 1—2 feet high, erect, leafy, branch-

ing, *many-flowered*. Leaves *smooth*, biter-nate—leaflets 3—5 lobed, radical ones on long foot-stalks, stem ones without leaf-stalks. Flowers large, drooping, produced from the tops of the naked branches—petals 5, purple, passing into large, hollow, spurred nectaries of a blueish colour, yellow at the tip, and *incurved*—segments of the calyx 5, purple, like petals—styles not longer than the stamens—capsules villous. A common plant in our gardens.

ORDER IV. POLYGYNIA, Many pistils in each flower along with the stamens.

GENUS IX. MEADOW RUE, *Thalictrum*. No calyx—petals (sometimes called a calyx) 4 or 5, ovate, soon falling off—seeds many, tailless, streaked lengthwise.

Species I. *Common Meadow Rue*, *T. Flavum*. Banks of Rivers. July. On the Clyde at Rutherglen bridge, Dalbeth, Carmyle, Daldowie; and at the bottom of the Rocks between Corhouse and Bonnington, on the Lesmahagow side, very abundant. Stem 2—3 feet high, *erect, grooved, branched*. Leaves bipinnate—segments wedge-shaped, 3-cut, acute. Panicle branched very much, contracted, slightly leafed—flowers erect, very yellow—stamens 24, yellowish white, with oblong, slightly pointed, yellow anthers—stigmas thick heart-

shaped, white. The yellow perennial root is astringent yet purgative.

GENUS X. ANEMONE, *Anemone*. No calyx—petals (sometimes called a calyx) 5—9—seeds very many.

Species I. *Wood Anemone*, *A. Nemorosa*. Frequent in woods and shady places. April. Avon opposite Barncluith ; Woods at Jer-viston &c., very abundant. Plant 6—10 inches high—stem simple *single-flowered*. Leaves ternate, lobed and cut—lobes 3-cut, deeply toothed, lanceolate, sharp, sometimes dotted yellow beneath—involucre within a little of the flower, similar to the other leaves. Flowers usually of a white or blueish colour—petals 6, elliptic—capsules awnless. This plant is acrid inducing dysentery ; but is useful in head-ache, intermittent fevers, and rheumatic gout.

GENUS XI. CROWFOOT, *Ranunculus*. Calyx 5-leaved—petals 5, with a honied scale or pit at the base—pericarps without awns. A numerous family, but readily distinguished by the nectary or little scale at the base of the petals. The butter-cups or yellow gowans so common every where belong to this genus.

1. *Leaves simple and undivided.*

Species I. *Great Spear-wort*, *R. Lingua*. By a loch near Loudon hill, and by the *bank of the great Canal* near Stockenfield.

July. Stems 3—4 feet high, upright, many flowered, glabrous. Leaves *lanceolate*, not cut, or slightly serrulated, nearly embracing the stem. Flowers large of a bright golden colour.

Species II. *Lesser Spearwort*, R. Flammula. Abundant in bogs and meadows. July—September. Moist place in Barncluith green; among the old Oaks Hamilton wood &c. Stems 6—18 inches long, *declined*, many, slightly rooting at the bottom. Leaves linear lanceolate, slightly ovate, scarcely cut, the lower ones petioled. Flowers numerous, solitary, on long stalks, of a rich shining yellow. The distilled water acts as a speedy and powerful emetic. The plant is sometimes used for raising blisters, and for curdling milk.

Calyx of three leaves, petals 9.

Species III. *Pile-wort*, R. Ficaria. Common in meadows and orchards in the spring months. Hedge roots between Hamilton and Barncluith &c. Knobs or tubers of the root shaped like the Fig. Stem 3—5 inches high, leafy, one flowered. Leaves heart-shaped, angular, longly petioled, shining, sometimes with a black spot. Flowers yellow shining, becoming whitish at the tip—petals about 9—calyx leaves 3. This forms the genus *Ficaria* of Brunsfel.

2. *Leaves variously divided.*

Species IV. *Wood Crowfoot*, R. Auricomus. Woods at Jerviston, abundant. April, May. Stems about a foot high, branched, many flowered. Leaves glabrous, root ones petioled, *heart-shaped*, generally 3-parted, or 3-lobed, stem ones cleft to the base, in about 6 or 7 *linear segments*, sometimes slightly toothed. Flowers of a bright golden hue, terminating, erect, solitary, on round pubescent peduncles—petals sometimes wanting—calyx leaves *yellow, downy*, shorter than the petals, edge sometimes dilated. In this species the nectary is a small oblique hole running downwards to the base of each petal. This is not acrid like the other species.

Species V. *Celery-leaved Crowfoot*, R. Sceleratus. Watery places. June—August. About Frankfield Loch. Herb pale green, various in size and luxuriance. Stem thick, juicy, 12—18 inches high. Leaves shining, glabrous, lower ones very broad petioled, 3 parted, segments 3-lobed, slightly and bluntly cut, uppermost ones 3-parted, lobes oblong linear, not cut. Flowers very small, numerous, of a palish yellow—petals scarcely longer than the calyx—stamens 8—12—seed-heads smooth and oblong. When chewed this plant inflames the *tongue*, and produces very violent effects.

Species VI. *Acrid Crowfoot*, R. *Acris*. Abundant in fields and pastures. May—July. Hedge roots below Haugh-head House &c. Stem 6—20 inches high, upright, slightly downy, many flowered, branched above. Leaves mostly pubescent, 3-partite, lobes deeply *toothed*, acute, the stem leaves divided into linear segments. Flowers on peduncles *not* furrowed, bright shining yellow—calyx villous—pericarps terminated by a nearly straight point. *Acrid* in all its parts.

Species VII. *Creeping Crowfoot*, R. *Repens*. Too common in pasture lands. June—August. Herb rough and hairy, of a dark green, increasing by *runners*. Stems prostrate, the flower bearing one nearly *upright*. Leaves pinnately 3-cut, segments *wedge-shaped*, 3-lobed, deeply *toothed*—the middle segment has always a leaf-stalk, the side ones are sometimes sessile, the upper surface dark green spotted with white or black, or downy and spotless. Flowers on *furrowed* peduncles, deep yellow—calyx close—pericarps with a straight beak. This is a most inveterate weed, thriving well in almost any soil.

Species VIII. *Corn Crowfoot*, R. *Arvensis*. At Bogle's Hole. June. Plant of a pale colour. Stem 12—18 inches high, *upright*, much branched, *many flowered*.

Leaves glabrous, root ones 3-parted, stem ones many cut, lobes more or less *linear*, edge not cut, tip sharply cut. Flowers small lemon coloured—stamens 12—14—pericarps few (6 or 7) *large* and *prickly*. Highly acrimonious when fresh; 3 ounces of the juice killed a dog in 4 minutes.

With the Calyx bent back.

Species IX. *Bulbous Crowfoot*, R. *Bulbosus*. Abundant in dry pastures. May. At Chatelherault; on Barncluith green, and on the bank between Avon Bridge and Barncluith gate &c. Root a bulb somewhat resembling a turnip. Stem 6—20 inches high, upright, many flowered, hairy, bulbous at the base. Leaves more or less hairy, root ones petioled, 3-cut, lobes 3-cut, deeply toothed, the middle lobe slightly petioled, upper leaves sessile, cleft into linear segments. Flowers on furrowed peduncles yellow—calyx reflexed—pericarps smooth. This species is the “Cuckow-buds of yellow hue” in Shakespeare.

Species X. *Hairy Crowfoot*, R. *Hirsutus*. Side of a burn between Tollcross and Dalbeth; Orchard at Covant burn very abundant but now generally cut down with the grass. June to August. Root fibrous. Stem from 3—12 inches high, branchy, many flowered, upright or trailing, hairy, hairs *spreading*, not bulbous at bottom. Leaves

pale, hairy, 3-lobed, or 3-cut, lobes blunt, deeply toothed, the middle pedunculated—the upper leaves are more or less cut into linear segments. Flowers on furrowed hairy peduncles—petals yellow above, paler and opaque beneath—calyx reflexed hairy, hairs glandular at the base—pericarps with a single row of very small tubercles round the edge.

Flowers white.

Species XI. *Ivy-leaved Crowfoot*, *R. Hederaceus*. Not uncommon in shallow muddy ditches during the summer. Ditch between Chatelherault and the Deer Park; ditches at Laigh Motherwell, and at White-moss and Crosshill Kilbride &c. Stems short, *trailing* or swimming, round, branched, striking numerous roots. Leaves *nearly* kidney-shaped, 3 or 5-lobed—lobes broad, *blunt, entire*, shallow. Flowers small, white, yellowish at bottom, on short peduncles—petals narrow, a little longer than the calyx—stamens from 5—12. This and the following species constitute the genus *Batrachium* of De Candolle.

Species XII. *Water Crowfoot*, *R. Aquatilis*. Frequent in rivers and ditches. May, June. Clyde a few hundred yards below Hamilton bridge &c. Stems varying in length, floating, submersed. Leaves varying—under water, many cut, thread-like

—above water 3-parted, lobes wedge-shaped toothed at the tip. Flowers sometimes very large, white, yellow at bottom, making a handsome appearance in the water—petals reverse ovate, larger than the calyx—stamens from 12 to 24—pericarps glabrous or hispid. This plant is not acrimonious, but will feed and even fatten cattle. The variety with hair-like leaves is common in this district.

F. GENUS XI. MARSH MARIGOLD, *Caltha*. No calyx—corolla (sometimes called a calyx) of 5 leaves, nearly orbicular—capsules spreading, 1-celled, many seeded.

Species I. *Marsh Marigold*, *C. Palustris*. Common in marshy places and wet meadows. May, June. Deadwaters Ross &c. Stems several, from 6—18 inches high, stout, nearly round, yellow, forked, branched, purple at bottom. Leaves large, *heart-shaped*, nearly round, bluntly *crenate*, glabrous, shining—upper ones smaller and nearly sessile—ears rounded. Flowers on furrowed flower-stalks, large, fine deep yellow, without any gloss on the upper side—anthers, yellow, flat, oblong, bending inward—the inner row of filaments with broad anthers, the outer twice as long, club-shaped with compressed anthers—seeds beautiful, at the bottom of an olive, and at top of a ~~blackish~~ *fish* colour. The juice of the petals,

boiled with alum, stains paper yellow. The flowers gathered young are a good substitute for Capers.

GENUS XII. GLOBE FLOWER, *Trollius*. No calyx—petals about 14, 3 in each outer row, in the inmost 5—nectaries 9, linear, flat, curved in, perforated at the base inwards—pericarps cylindrical, many seeded.

Species I. *Globe-flower*, T. Europæus. Frequent in meadows and moist shady places. June, July. Between the Lead and Avon at Avon Mill; Avon opposite Barncluith; Clyde above Ross, at Bothwell and Daldowie; Glenhove New Monkland &c. Stems several 1—2 feet high, smooth, hollow, branching towards the top—each branch terminated by a flower. Leaves smooth, dark green, 5-parted, the lobes variously divided and cut—the lower ones on long petioles. Flowers large, very handsome, first pale, then golden yellow, forming a ball (like a cabbage) of about 15 petals. This is the *Lucken-Gowan* of the Scotch. It is not found in the southern end of this Island.

GENUS XIII, HELLEBORE, *Helleborus*. No calyx—petals 5, large, roundish, mostly green—nectaries 8—10, very small, tubular—pericarps many seeded.

Species I. *Stinking Hellebore*, H. Foetidus. On the summit of a mass of stone by

the upper wall of Bothwell Castle; Blantyre Priory; Barncluith. March, April. Two or more feet high. Leaves evergreen, blackish green, *pedately* cut—lobes oblong linear. Flowers drooping, globose—petals green with a purple edge. Common in gardens. Root purgative, it or the stem used as a seton by farriers. The powder of the dried leaves is given for worms. . .

CLASS XIV.

DIDYNAMIA CONSISTS OF PLANTS HAVING 4
STAMENS 2 LONG AND 2 SHORT.

The short stamens stand together, and adjoining to the style of the pistil.

This class is perfectly natural. The stem is for the most part four sided. The blossom is of one petal, the lower part like a tube; and the border divided into two parts like lips; from which last circumstance the flowers belonging to the class are called labiate or lipped, and some of them, from their resemblance to an open mouth, are said to gape or grin. In most instances the upper lip is like a hood or helmet, and the lower one is spread out, and divided into three segments. Examine the flower of Mint or of common Snapdragon, and you will obtain a correct idea of the natural marks of the plants belonging to this Class. The labiate plants, after a little practice, may be recognised at first sight; yet the resemblance between the *genera* being so great it is often difficult to distinguish *them* from each other. In the following descriptions

I shall therefore be more brief than hitherto, and adhere chiefly to characteristic marks.

ORDER I. GYMNOSPERMIA. (In this order, the seeds have no covering, but are enclosed till ripe in the calyx instead of a seed-vessel or pericarp.)

1. *Calyx nearly regular—five or ten cleft.*

GENUS I. MOTHERWORT, *Leonurus*. Anthers speckled with shining dots—calyx not lipped, 5-toothed.

Species I. *Motherwort*, L. *Cardiaca*. Rare. About Craignethan Castle and near Corhouse Lesmahagow. August. Stem 2—3 feet high, downy, hard, 4 angled. Leaves somewhat like those of the Gooseberry—lower ones broadest between *ovate* and *wedge-shaped*, 3-lobed, toothed—upper ones *lanceolate*, undivided. Whirls of flowers numerous—blossom whitish on the outside, red and variegated on the inside, downy on the upper lip—anthers spotted with white. The herb is bitter and tonic, with no very pleasant though pungent smell. In the form of a conserve it is recommended as a cure for palpitations about the heart.

GENUS II. GROUND-IVY, *Glechoma*. Anthers sticking together in pairs—calyx not 2-lipped, 5 cut—upper lip of the blossom 2-cut, lower 3-cut, side lobes narrow, middle one large nicked.

Species I. *Ground-ivy*, G. *Hederacea*. Woods and hedges, frequent. April, May. Banks of the burn at Castle-hill; banks near Torrance &c. Herb downy. Stems creeping, a foot or so long, branches upright, flower-bearing. Leaves heart-shaped or kidney-shaped, crenate. Flowers in whirls, fine blue, 3 or 4 together. Herb used to fine malt liquors.

GENUS III. MINT, *Mentha*. Corolla nearly regular, 4-lobed, its broadest lobe notched. Stamens erect, distinct.

Species I. *Hairy Water-mint*, M. *Hirsuta*. Frequent by rivers and in marshes. August, September. Very variable. Stem 1—3 feet high—hairs on it and the peduncles *reflexed*. Leaves ovate, petiolate. Flowers numerous, lilac-coloured, capitate or whorled or both—calyx hirsute on every side. It is stimulant, and is used in sauces as a carminative. It grows by the Clyde opposite Ross.

Species II. *Tall Red-mint*, M. *Rubra*. On the Clyde below Ross wood. September. Stem 3—5 feet high, flexuose, reddish, glabrous. Leaves *ovate*, serrated *nearly glabrous*. Flowers *whorled*, purplish red, with a linear nearly hispid bractea at the base—pedicels and lower part of the calyx smooth, *teeth* hairy.

Species III. *Corn Mint*, *M. Arvensis*. Frequent in fields. June to September. Fields at Jerviston &c. Stem 3—12 inches high, more or less branched, very diffuse. Leaves in whirls, *ovate* or elliptical, rather obtuse. Flowers whirled, reddish purple—calyx campanulate, clothed with spreading hairs. The smell of the plant has been compared to that of the blue part of decayed cheese.

GENUS IV. WOOD SAGE, *Teucreum*. Upper lip of the corolla shortened, 2-partite, with the stamens projecting through the cleft, lower lip 3-lobed, its middle lobe the largest.

Species I. *Wood Sage*, *T. Scorodonia*. Frequent in woods and dry stony places. July, August. Road side between Raith and the Roman bridge &c. Stem 1—2 feet high, rigid, hairy. Leaves wrinkled, *cordate*, crenate-serrate, pubescent. Flowers in pairs, yellowish white, in lateral and terminal, secund racemes. This plant is in much repute with the village herbalist. It is bitter and when bruised smells like hops.

GENUS V. BUGLE, *Ajuga*. Anthers kidney-shaped. Upper lip of the corolla very minute, notched—lower one 3-lobed, middle lobe the largest, obcordate.

Species I. *Common Bugle*, *A. Reptans*. Abundant in moist woods and pastures.

May, June. Carriage way leading to Chatelherault &c. Stem 6—12 inches high, solitary, throwing out creeping scions. Leaves broadly ovate, more or less crenate, lower ones and those on the runners tapering into a foot-stalk. Flowers in whorls in the axils of the upper leaves, blue, becoming crowded towards the top—the upper leaves often purplish.

GENUS VI. BETONY, *Betonica*. Calyx teeth acuminate. Upper lip of the corolla spreading—lower 3-cleft, its tube cylindrical.

Species I. *Wood Betony*, *B. Officinalis*. Woods about Hamilton, and in an island in the Clyde near Nethanfoot, abundant. July, August. Plant rough with hairs. Stem 12—18 inches high. Leaves heart-shaped, crenate, rather hairy—lower ones petiolate—upper ones sessile. Corolla purple or white—middle segment of the lower lip *notched*—calyx rather smooth—Root emetic. The plant was formerly in high esteem as a cephalic. It is still drunk as tea.

GENUS VII. DEAD-NETTLE, *Lamium*. Upper lip of the corolla entire, vaulted—lower 2-lobed—throat with a bent back tooth on each side.

Species I. *White Dead-nettle*, *L. Album*. Frequent by ruins and road sides. May—August. By the upper parapet of Hamil-

ton bridge where the embankment terminates; about the village of Millheugh &c. Stems numerous 1—2 feet high, hollow. Leaves *heart-shaped*, on stalks, deeply serrated. Flowers white, rarely flesh-coloured, about 20 in a whirl—calyx with a brown spot—anthers black. This plant is of an astringent nature and is sometimes given in fluxes.

Species I. *Purple Dead-nettle*, L. *Purpurium*. Common in fields and waste places. May—September. By the rocks below Coursington bridge &c. Stems 6—12 inches high, hollow, and somewhat rugged. Leaves heart-shaped, *blunt*, on leaf-stalks—upper ones crowded. Flowers purplish, rarely white, in whorls of 8 or 10—tube of the corolla bearded on the inside at the bottom—calyx with the teeth fringed—anthers red. This is propagated by seeds.

Species III. *Cut-leaved Dead-nettle*, L. *Incisum*. Fields and road sides. May, June. About Jerviston abundant. Stem 6—9 inches high, branched at bottom. Leaves cordate-triangular, *cut*, on leaf-stalks—upper leaves crowded. Flowers small, purplish—tube of the blossom smooth (not bearded) on the inside—calyx very hairy.

Species IV. *Hen-bit Dead-nettle*, L. *Aplexicaule*. Frequent in gardens and sandy fields. February to June. Stems several,

6—12 inches high, slender. Leaves heart-shaped, upper ones tinged with red, embracing the stem—lower ones on stalks, bluntly and deeply serrated. Flowers rose coloured—early ones short and barren—later ones 4 times as long as the calyx, fertile. The Dead-nettles are sometimes called Archangel.

GENUS VIII. HEMP-NETTLE, *Galeopsis*. Upper lip of the corolla notched a little, vaulted—lip 3-lobed, middle one broadest with a tooth on each side between that and the lateral lobes—mouth with 2 elevated, hollow, blunt horns on the lower side—anthers smooth.

Species I. *Common Hemp-nettle*, *G. Tetrahit*. Frequent in corn fields. July, August. About Uddingston &c. Stem 1—2 feet high, very hispid, swollen under the joints. Leaves ovate, rough on both sides, *serrate*. Flowers sessile 17 or 18 in a whorl—either purple or white, with spots on the lower lip variegated with purple and yellow. Every part of this plant is rough with sharp prickles.

Species II. *Changeable Hemp-nettle*, *G. Versicolor*. Sandy fields. July, August. Stem stout, hispid, 1—2 feet high, *thickened* beneath the joints. Leaves broad, ovate, *serrated*, pale, hispid. Flowers in *contiguous whorls*—blossom large handsome, yel-

low—the lower lip with yellow lines and a central violet spot.

GENUS IX. WOUNDWORT, *Stachys*. Upper lip of the corolla vaulted—lower one 3-lobed, with the 2 side' lobes bent back—stamens becoming reflexed sideways.

Species I. *Wood Woundwort*, *S. Sylvatica*. Common in woods and shady places. July, August. Woody banks of the Avon at Haugh-head farm house &c. Stem 2—3 feet high, hairy. Leaves *heart-shaped*, acuminate, on *stalks*, dull green, *wrinkled*. Flowers dingy purple, the lower lip whitish, and mottled with dark spots and lines, 6 in a whorl—calyx hispid. The herb will dye yellow. Toads are said to be fond of its shade.

Species II. *Marsh Woundwort*, *S. Palustris*. In moist situations. August. Hamilton wood above Barncluith. Stem 2 feet high, rough with hairs, which are deflexed. Leaves *heart-shaped*, linear, lanceolate, acutely serrated, half embracing the stem. Flowers in dense long spikes, 6—10 in a whorl, purple, lip variegated. The herb when bruised by itself or made into an ointment is used to cure wounds.

Species III. *Corn Woundwort*, *S. Arvensis*. Fields at Carmyle and Uddingston. August. Stems *weak*, 8—16 inches long, *decumbent* smooth or hairy. Leaves *heart-*

shaped, obtuse, crenate, somewhat hairy. Flowers 6 in a whorl, pale purple or flesh coloured—blossoms small *scarcely* exceeding the calyx.

GENUS X. CAT-MINT, *Nepeta*. Upper lip of the blossom notched—the lower one 3-lobed, its middle lobe the largest, crenate—lateral ones very short, reflexed.

Species I. *Nep*, or *Cat-mint*, *N. Cattaria*. I have seen a few plants by the border of a field at Craignethan. August. Stems 2—3 feet high, branching, whitish. Leaves *heart-shaped, toothed, serrated, wrinkled.* Flowers spiked, whorls pedicelled—blossom white, lip spotted with red. Smell aromatic, between Mint and Pennyroyal—much liked by cats, especially if transplanted. Hence the old saying,

“ If you set it, the cats will eat it ;
If you sow it, the cats dont know it.”

2. *The following have a calyx with two lips.*

GENUS XI. SKULL-CAP, *Scutellaria*. Calyx with an entire mouth—the upper lip covering the fruit like a lid.

Species I. *Common Skull-cap*, *S. Galericulata*. August. I insert this plant as likely to be found in the district, although I know of no station for it nearer than Bowling Bay, and the landing place at Inversnaid on Lochlommond. Stem 10—20 inches high, branched in the middle. Leaves

heart-shaped, lanceolate, distinctly crenated, wrinkled. Flowers axillary, in pairs, pubescent, blue—bractees 2 to each flower—calyx hairy. This plant has been given for the tertian ague.

Species II. *Small Skull-cap, S. Minor.* At Rosebank Rutherglen. August. Stem 4—6 inches high, branchy at bottom. Leaves *heart-shaped, ovate, edge scarcely nicked. Flowers axillary solitary—tube of the blossom red—lip white, spotted with red. This is only one fourth the size of the last species.*

GENUS XII. THYME, *Thymus*. Throat of the calyx closed with soft hairs—upper lip of the blossom flat, notched.

Species I. *Wild Thyme, T. Serpyllum.* Common in dry sandy heaths. August. About Fortisset, Shotts &c. Stem lying down. Leaves flat, blunt, fringed at bottom. Flowers in heads, purplish—calyx ribbed dotted. Aromatic, used as a pot-herb in soups.

GENUS XIII. SELF-HEAL, *Prunella*. Filaments forked or 2-toothed, one branch bearing an anther, the other naked—stigma 2-cut.

Species I. *Common Self-heal, P. Vulgaris.* Common in fields and pastures. August. Barncluith green &c. Stem crooked at the base 6—12. inches high, hairy. Flowers

purple, or violet blue, densely whorled so as to form an oblong spike, each whorl accompanied by 2 bracteas—calyx closed in fruit—stamens forked. Used in inflammatory sore throats, and in the cure of fresh wounds.

GENUS XIV. MARJORAM, *Origanum*. Calyces and bracteas collected into a spiked cone—upper lip of the blossom straight notched.

Species I. *Wild Marjoram*, O. Vulgare. In bushy places. August. Ross wood, and on the Clyde between Dalserf and Nethanfoot &c. Stems many, 8—12 inches high, purplish, hairy, hairs turned back. Leaves ovate slightly and rarely serrated. Flowers pale red, hairy, in numerous small spikes, clustered so as to form a terminal head—bracteas of a deep brownish colour, as long as the calyx. The dried leaves make a good tea. Tops dye purple. Plant warm and aromatic.

GENUS XV. BASIL, *Clinopodium*. Involucre many bristled under the whorl—upper lip of the blossom erect, emarginate—anthers roundish.

Species I. *Wild Basil*, C. Vulgare. Common in bushy places. August. Banks near Chatelherault &c. Stem 10—20 inches high, a little zig-zag, hairy, fulvous. Leaves *ovate*, on stalks, blunt, remote, slightly

toothed, hairy. Flowers purplish rose coloured, in *hairy* whorls—blossom twice longer than the calyx with 2 hairy knobs at the orifice—calyx ribbed hairy—peduncles branched. The plant is aromatic with a faint Thyme—like odour.

ORDER II. ANGIOSPERMIA. In this order, the seeds are enclosed in a seed-vesSEL, or pericarp.

1. *Calyx four cleft.*

GENUS XIV. BARTSIA, *Bartsia*. Calyx 2-lobed, emarginate, coloured—blossom coloured less than the calyx—upper lip longest—capsule 2-celled, seeds angular.

Species I. *Red Bartsia*, B. *Odontites*. Common by road sides and in fields. August. About Greenfield &c. Stem 6—12 inches high, much branched, hairy. Leaves rough, *linear* or lanceolate, serrated, the upper alternate. Flowers rose coloured, very numerous, in spikes which incline to one side—calyx hairy—anthers smoothish protruded from the flower.

GENUS XVII. YELLOW RATTLE, *Rhinanthus*. Calyx bellied 4-cut—the upper lip of the blossom compressed—capsule 2-celled, blunt compressed.

Species I. *Yellow Rattle*, R. *Crista-Galli*. Abundant in meadows and pastures. June. Fields at Deadwaters Ross &c. Stem 8—12 inches high, much branched, smooth

often spotted. Leaves *lanceolate*, acutely serrated, veined. Flowers yellow, rough, heart-shaped at bottom, crowded towards the summit—upper lip of the blossom *arched*—calyx smooth reticulately veined, inflated after flowering and filled with seeds which make a rattling sound when shaken. In some countries it ripens with the hay.

GENUS XVIII. COW-WHEAT, *Melampyrum*. Calyx 4-cleft—upper lip of the blossom compressed with the edge folded back—capsule 2-celled, oblique, opening on one side—seeds 2, gibbous.

Species I. *Yellow Cow-wheat*, *M. Pratense*. Abundant in woods and thickets. July. Hamilton wood opposite Silverton-hill; Jerviston; Lanark woods &c. Stem 12—18 inches high, slender, smooth, branched. Leaves lanceolate, glabrous, in *distant* pairs. Flowers lateral, directed the same way—tube of the blossom white, mouth *closed* yellow, palate fulvous—calyx rather coloured, 3 times shorter than the blossom. The butter, according to Linneus, is yellow where this plant abounds.

GENUS XIX. EYEBRIGHT, *Euphrasia*. Calyx with 4 equal teeth—upper lip of the blossom cloven, lower 3-lobed, lobes cloven—lobes of the lower anthers spinous—seeds striated.

Species I. *Shop Eyebright*, *E. Officinalis*. Common in damp pastures. August. Old oaks Hamilton wood; in the plot of ground around Dalziel Church &c. Stem 2—6 inches high, purplish, rough with deflexed hairs. Leaves *ovate, linear, shortly toothed*. Flowers alternate, sessile, white with purplish lines, palate yellow—calyx hairy—capsule nicked—anthers with 2 spines at the base. Plant weakly astringent—reputed ophthalmic.

2. *Calyx five cleft*.

GENUS XX. FIGWORT, *Scrophularia*. Blossom globose—upper lip with a scale in the middle on the inside—capsule 2-celled. Species I. *Knotty Figwort*, *S. Nodosa*. Common in woods and hedges. July. Stem 3 feet high, upright, simple. Leaves *heart-shaped, lanceolate, acute, toothed*—3-ribbed at the base. Flowers small, of a blackish blood colour, in terminal forked racemes. A decoction of the leaves is used for the scab in swine. The herb has a rank smell and bitter taste.

Species II. *Water Figwort*, *S. Aquatica*. Rare in watery places. August. Ditch in Carmyle wood; Ditch at the bottom of the knoll on which the old Mansion-house of Jerviston stands, in great abundance. Stem 3 or 4 feet high, winged. Leaves large, heart-shaped, *blunt, serrated*, running down

the corners of the stem. Flowers blackish blood colour, in mostly solitary terminal racemes.

Species III. *Yellow Figwort*, *S. Vernalis*. Walls of Bothwell Castle. May. Stem about 2 feet high, hairy. Leaves heart-shaped, acutely and *doubly* serrated, *downy*. Flowers crowded yellow, bellied, without the scale in the upper lip of the blossom.

GENUS XXI. FOXGLOVE, *Digitalis*. Blossom Bell-shaped, 5-cleft, bellying—capsule ovate, 2-celled.

Species I. *Purple Foxglove*, *D. Purpurea*. Common in woods. July. Hamilton wood about Darling's bridge; and with white flowers by the Calder at Wishaw House. Stem 3 or 4 feet high, downy. Leaves ovate, lanceolate, wrinkled, pubescent. Flowers purple or white, with blood coloured spots and hairs, large, bell-shaped—segments of the calyx acute. Recommended as a pulmonary and epileptic medicine when boiled in wine or water. The leaves are now considered as one of our most valuable diuretics in dropsy, either in powder, infusion or tincture, and as a sedative in pulmonary consumption; but as it has a great effect in reducing arterial action and retarding the pulse it ought to be used with extreme caution.

GENUS XXII. SNAPDRAGON, *Antirrhinum*. Blossom with the base produced downwards or spurred—capsule 3-celled.

Species I. *Ivy-leaved Toad-flax*, *A. Cymbalaria*. On the upper or southern wall of Bothwell Castle. May—November. Stems long filiform, weak. Leaves fleshy, heart-shaped, 5-lobed, often purplish beneath. Flowers violet, palate yellow, spur short. The whole plant is smooth and has a disagreeable smell; it is well adapted to ornament rock-work, which if moist, it will soon cover with a thick tapestry.

Species II. *Yellow Toad-flax*, *A. Linaria*. Occasionally by the border of Cornfields. August. About Raith; fields at Campbleachfield; Carriage way leading to Chatelherault &c. Stem 1—2 feet high, scarcely branched, *upright, spiked*. Leaves lanceolate, linear, crowded. Flowers close in a many flowered spike, gold yellow—palate villous, fulvous—calyx smooth shorter than the spur. The juice of this herb mixed with milk is a poison for flies. In ointment it is useful for piles.

Species III. *Least Toad-flax*, *A. Minus*. Old walls at Barncluith. Stem 4—6 inches high, much branched spreading. Leaves linear, lanceolate, blunt, mostly alternate pubescent. Flowers solitary, axillary, upon

rather long peduncles, purplish, with the lower lip yellow.

Species IV. *Great Snapdragon*, *A. Majus*. Walls at Barncluith and at Chatelherault, abundant. August. Stems 1—2 feet high, Leaves *lanceolate*, *alternate*, those of the branches opposite. Flowers very large, mostly purplish red, but often varying to white, spiked—segments of the calyx *ovate*, obtuse.

GENUS XXIII. LOUSEWORT, *Pedicularis*. Calyx inflated. Upper lip of the blossom compressed, arched—lower lip plane, 3-lobed—seeds angular.

Species I. *Marsh Lousewort*, *P. Palustris*. Common in marshes and wet pastures. July. Stem 10—14 inches high, with many small lateral *branches*. Leaves pinnate, pinnæ ovate, almost pinnatifid. Flowers solitary axillary, rose coloured, in leafy spikes—calyx ovate, hairy, ribbed, 2-lobed lobes crenate. This is a dingy coloured bushy looking plant. It abounds in a wet field at Allington farm and about the Deadwaters.

Species II. *Wood Lousewort*, *P. Sylvatica*. Common in moist pastures and heaths. July. Old oaks Hamilton wood &c. Stem 3—6 inches high, much *branched* from the bottom. Leaves radical ovate, pinnate—pinnæ ovate, acutely toothed. Flowers

large handsome, rose coloured—calyx inflated, with 5 unequally notched segments. Farmers suppose that this and the former species render sheep scabby and over-run with vermin.

CLASS XV.

TETRADYNAMIA COMPREHENDS PLANTS HAVING SIX STAMENS IN EACH FLOWER, 4 LONG AND 2 SHORT.

In the sixth class the six stamens are all of equal length, but in this 4 of them are longer than the other two. This is also a natural class, and when one or two of them are once known, these will serve as a means for discovering the rest. The flowers have almost uniformly four petals spread out in the form of a St Andrew's Cross—hence the term cruciform or cross-shaped which has been applied to all the plants of this class. The fruit or seeds in all are contained either in a short roundish pod or pouch, or in a long slender pod, from which circumstance the character of the orders is derived. Examine the flowers of common Wall-flower, of Sea Kale and of Shepherd's purse.

ORDER I. SILICULOSA. The character of this order consists in the pod (silicula) being broad and globular *i. e.* a roundish flat seed-vessel, furnished with a style, which is frequently as long as the seed-vessel itself.

GENUS I. SHEPHERD'S PURSE, *Thlaspi*. Pod nicked at the top, reverse-heartshaped, many seeded—filaments toothless, inserted in the mouth of the calyx—leaves of the calyx equal, spreading.

Species I. *Penny Cress*, T. Arvense. Field between Dalbeth and Westhorn. June, July. Herb smooth about a foot high, with 7 or 8 membranaceous edges, branched above. Leaves *oblong, arrow-shaped, toothed*. Flowers white—petals small, not nicked, twice the length of the calyx—seed-pouch orbicular, large, with unusually broad longitudinal wings, whence the name Penny-cress—seeds *concentrically* streaked. The herb has a garlick flavour, and is very rare here.

Species II. *Shepherd's Purse*, T. Bursa Pastoris. Abundant on walls and by road sides, the whole summer. By the parapet walls at Hamilton Bridge &c. Very variable, from 3 inches to 1—2 feet high. Root leaves *pinnatifid*, upper ones oblong and sagitate at the base. Flowers white—seed pouch reverse heart-shaped, *without* wings, on which account it has been separated from

the above and called *Capsella*. It abounds almost every where.

GENUS II. *TEESDALIA*, *Teesdalia*. Seed-pouch emarginate, valves keeled and winged—filaments with a little scale within at the base.

Species I. *Naked-stalked*, *Teesdalia*, T. *Nudicaulis*. Rare. Sandy fields at Toll-cross. June. Stems 2—3 inches high, numerous, central, stiff, upright, leafless—side ones, ascending sometimes with leaves. Root leaves spread on the ground on a circle stalked. Flowers in a terminating spike-like raceme, small, white, 2 of the petals longer than the other two. A diminutive plant, rarely admitted into gardens.

GENUS III. *CANDY-TUFT*, *Iberis*. Seed-pouch nicked, valveless, boat-shaped, winged—cells 1-seeded—petals unequal.

Species I. *Bitter Candy-tuft*, I. *Amara*. Sands below Hamilton bridge, nearly opposite the termination of the plantation. July. Stems diffused, branched, often a foot high. Leaves lanceolate, slightly toothed, rather pointed. Flowers white, in a terminating spike-like raceme. The above can scarcely be the station alluded to by Lightfoot.

GENUS IV. *PEPPERWORT*, *Lepidium*. Seed-pouch 2-valved, valves boat-shaped—cells 1-seeded—petals equal.

Species I. *Broad-leaved Pepperwort*, L. *Latifolium*. Once found by Dr Brown, on the rock on which Bothwell Castle is built. July. Stem 2—3 feet high, branched, erect. Leaves large, *lanceolate, undivided, serrated or uncut*, glaucous, pointed. Flowers numerous, small, in many terminal, and axillary, clustered racemes. This plant is generally found near the sea, is acrid, antiscorbutic, and in infusion vomitive,

Species II. *Field Pepperwort*, L. *Campestre*. Rare, in corn fields and rubbish. July. Corn fields near Strathaven, at Langside, and by the road side at Drumpellier near Airdrie. Stems 10—12 inches high, round, very slightly angular. Leaves woolly, those of the stem *arrow-shaped, toothed*, lower ones almost spathulate. Flowers very small and white, in long upright racemes—seed-pouch dotted or curiously scaly. The leaves are hot.

Species III. *Hairy Pepperwort*, L. *Hirtum*. Near Blantyre Priory. June. Stem leaves *sagittate, toothed, hairy*. Flowers white, small, in blunt hairy racemes—pouch longish, nicked, not dotted. The flowers are much larger than in the last species.

GENUS V. SCURVY-GRASS, *Cochlearia*. Seed-pouch ovate, many seeded—valves bellied—seeds not margined—filaments short toothless—calyx open.

Species I. *Horse-radish*, *C. Armoracia*. Waste ground about Barncluith. May. Stem about 2 feet high, angular, branched upwards. Leaves much veined, root ones *oblong crenate*, stem ones *lanceolate, toothed* or *deeply cut*. Flowers white in elongating racemes—stigma dilated, nearly sessile—pouch oblong. The acrid, stimulant root is used at table.

GENUS VI. WHITLOW-GRASS, *Draba*. Pouch oval, not notched—valves flat, or slightly convex—cells many seeded—seeds margined—filaments toothless.

Species I. *Spring Whitlow-grass*, *D. Verna*. Frequent on walls and sandy places. April. Top of old Riccarton-house, wall top old Oaks &c. Scape or flower-stem 2—6 inches high naked. Leaves from the root, oblique, pointed, hairy, slightly serrated. Flowers small in a corymbose head—petals 2-cut—pouch smooth crowned by a persistent stigma. A very small herb—used sometimes in whitlows or felons.

GENUS VII. CAMELINE, *Camelina*. Pouch nearly ovate, many seeded—valves bellied filaments toothless.

Species I. *Cultivated Cameline or Gold of Pleasure*, *B. Sativa*. South side of Frankfield Loch, and in New Monkland. June. Stem 2—3 feet high, upright, downy, pan-

icled at top. Leaves lanceolate, arrow-shaped, embracing the stem with their sagittate base. Flowers numerous, small, yellow, in corymbs, changing to very long racemes—pouch reverse ovate margined—stigma simple. Imported with flax—Cultivated for the oil yielded by its seeds.

ORDER II. SILIQUOSA, In this order the seed-vessel is a *siliqua*, or long pod.

GENUS VIII. LADIES' SMOCK, *Cardamine*. Pod edges truncated, linear—valves flat, ribless often flying back elastically—partition very narrow.

Species I. *Bitter Ladies' Smock*, *C. Amara*. Frequent in watery places. May, June. By the great burn Hamilton wood: by the Lead above Avon Mill; on the Clyde at Uddingston and Kenmuir &c. Stem a foot or more high, rooting at the base. Leaves pinnate—having the leaflets of the root leaves *roundish*, and those of the stem leaves *angular* toothed. Flowers large, white or cream coloured—anthers violet coloured—stigma rather acute. An elegant plant, slightly acrid and bitter, and eaten in salads.

Species II. *Meadow Ladies' Smock*, *C. Pratensis*. Abundant in meadows. May. Deadwaters Allington &c. Stem 9—12 inches high, stiffish, with a purple tinge at bottom. Leaves pinnate—root ones with *nearly* round leaflets—stem ones with lan-

ceolate leaflets. Flowers large purplish—
anthers yellow—style striated, stigma head-
ed. The flowers of this common plant are
useful in epilepsy and hysteria-grs. 20 to 90
twice a day.

Species III. *Narrow-leaved Ladies' Smock*,
C. *Impatiens*. Rocks on the banks of the
river above the falls of the Clyde. June.
Stem 12—18 inches high, branchy, angular.
Leaves *pinnate* (many furred) leaflets lance-
olate, slightly *cut*, with fringed stipules at the
base of each leaf. Flowers minute, white, in
erect spikes—petals linear or wanting. It is
called *impatiens* from the elasticity of the valves
which when touched suddenly burst asunder,
and discharge the seeds with an elastic force.

Species IV. *Hairy Ladies' Smock*, C.
Hirsuta. Common in ruins and damp shady
places. May, June. Moist places by the
Carriage way near Cadzow Castle; Gilburn-
synk Kilbride &c. Stems from 4 to 12 or
more inches high, solid, branchy, flexuose,
purple near the base and commonly very
hairy. Leaves *pinnate*, those of the root
forming a circle—leaflets roundish—no sti-
pules. Flowers small, white, numerous—
stamens 4 to 6—pod about an inch long,
upright. It tastes somewhat like *cresses*,
and is a good salad in spring.

GENUS IX. ROCK-CRESS, *Arabis*. Pod
lineared crowned with the sessile stigma—

valve veined and ribbed—seeds in a single row—calyx upright.

Species I. *Common Wall-cress*, *A. Thaliana*. Common on walls and sandy places. April. About the Mount Chatelherault &c. Stem 6—10 inches long, *branched* hairy. Leaves toothed hairy—root ones *oblong* petioled, stem ones few. Flowers small, white—stamens as long as the petals—pod slender ascending.

Species II. *Hairy Tower Mustard*, *A. Hirsuta*. Bottom of Cartlane Craigs. June. Stem 8—12 inches high, stiff, rough with hairs, very leafy. Leaves very rough, numerous, dentate—root ones *obovate petiolate*—stem ones *ovate-lanceolate*, *half* embracing the stem. Flowers small, white—stigma nearly sessile—pods an inch long, numerous, compressed.

GENUS X. WINTER-CRESS, *Barbarea*. Pod 4-sided or 2-edged—seeds 1-rowed—calyx upright—the 2 shorter stamens with a gland between them.

Species I. *Common Winter Cress*, *B. Vulgaris*. Common on banks of ditches and rivers. June. Castlemilk and banks of the Calder below Calder-wood; about Hamilton; Orchard near the old house of Jerviston &c. abundant. Stem 1—2 feet high, mostly branched, furrowed, glabrous. *Leaves* shining, dark green—lower ones

, terminal lobe *rounded*—upper ones *obovate toothed*. Flowers yellow numerous, in round heads—pod short, upright. A notable variety is often cultivated with us under the name of *yellow July-flower*, and *the Rocket*.

GENUS XI. CRESS, *Nasturtium*. Pod cylindrical—valves concave, neither dented nor keeled—calyx spreading.

SPECIES I. *Water-cress*, *N. Officinale*. Abundant in brooks and rivulets. July. In a ditch between Cadzow Castle and house &c. Stem declining rooting at the bottom, floating in deep water. Leaves long, pinnate—leaflets ovate, rather arrow-shaped, from 5—7, the end one large, greenish. Flowers white, small—pod long. This is an excellent spring herb, and as an antiscorbutic is less acrid than scurvy-grass.

SPECIES II. *Marsh Nasturtium*, *M. Terrestris*. Banks of Frankfield Loch. June to September. Root simply *fibrous*. Stem 12 inches high, branched. Leaves long, between lyrate and pinnate, *unevenly* toothed. Flowers minute yellow—*not* longer than the calyx—pods small.

SPECIES III. *Amphibious Nasturtium*, *N. Helminthiospermum*. Banks of the Clyde at Bogs of Broomie Loch near the house. June—

September. Root fibrous. Stems 2—3 feet high, somewhat branched, furrowed. Leaves *oblong, lanceolate*, pinnatifid, or serrate. Flowers yellow, petals *longer* than the calyx—pods very short, in elongated racemes.

GENUS XII. HEDGE-MUSTARD, *Sisymbrium*. Pods nearly cylindrical or angular—calyx spreading, sometimes rather upright.

Species I. *Hedge Mustard*, *S. Officinale*. Common in waste places and by way sides. July. About Hamilton bridge; Fairny-gare &c. Stem 1—2 feet high, rather rigid, branched—branches hispid, spreading. Leaves nearly *runcinate*, the terminal lobe large. Flowers numerous, minute, yellow—pods awl-shaped, close pressed to the main stalk. The juice made into a syrup and slowly swallowed is of great use in hoarseness and ulcers of the throat.

Species II, *Flix-weed*, *S. Sophia*. In waste places. At Mauldsley Castle. July. Stem about a foot high, branchy. Leaves *doubly* pinnate—leaflets linear, decurrent, the terminal one largest. Flowers numerous, small, yellow—petals *smaller* than the calyx. This herb which is not common here—is used in hysteric cases, and for fluxes—hence perhaps its name Flux-weed.

GENUS XIII. HEDGE MUSTARD, *Erysimum*. Pod 4-sided—seeds not margined—

is headed or notched, spread on the
—calyx open.

Species I. *Garlick Hedge Mustard*, E.
ia. Shady hedges. May. Common
t Dalsersf *e. g.* by the narrow path lead-
p from the Toll-house to the Manse;
e bridge over the rivulet immediately
nd Hamilton bridge &c. Stem 2—3
high, branched. Leaves *heart-shaped*,
alks, deeply *toothed*, large, veined, com-
municating a garlic-like smell. Flowers
—petals marked with a few veins—
very long. It communicates a rank
ur to poultry that eat it.

GENUS XIV. WALL-FLOWER, *Cheiran-*
Pods compressed, 2-edged—calyx
d, opposite leaflets bagged at bottom—
ia sitting on the style, headed or 2-
l, lobes spreading.

Species I. *Wild Wall-flower*, C. *Cheiri*.
walls as at Cragneithan and Bothwell.
. Stem shrubby, branches angular.
es lanceolate, pointed, hoary under-
1. Flowers yellow, odoriferous—petals
bent down. Many varieties of this
: are cultivated in our gardens.

GENUS XV. DAME'S VIOLET, *Hesperis*.
4-sided or 2-edged—stigma nearly
le, the lobes meeting—calyx erect.
Species I. *Dame's Violet*, H. *Matronalis*.
at Holytown and in the plantation be-

low Hamilton bridge. Stem 1—2 feet high, slightly branched, hairy. Leaves varying from ovate-lanceolate to nearly cordate, rough, woolly on both sides. Flowers large purplish red—petal limb *reverse ovate*—pod upright *twisted*, edges *plain*. An outcast of the garden.

GENUS XVI. TURNEP, *Brassica*. Pod 2-valved, beaked, beak barren or 1-seeded—calyx closed.

Species I. *Wild Navew*, *B. Napus*. Frequent on banks and in corn fields. June. Bed of the Calder between Cleland and Carfin &c. Stem 1—2 feet high, round, glabrous, glaucous, branched. Leaves smooth—upper ones *heart-lance-shaped*, embracing the stem, lobes entire—lower ones *lyrate*, toothed (lobes crenate.) Flowers numerous, yellow, rather small—pods spreading, beak angular. Much cultivated especially in the Isle of Ely under the name of Rape or Cole-seed, for the sake of its seeds from which Rape-oil is procured: this oil is used in woolcombing.

Species II. *Turnep*, *B. Rapa*. Frequent on the borders of fields. April. Stem 1—2 feet high, round, glabrous, branched. Leaves—those of the root *lyrate*, rough, dark green—those of the stem *not cut*, smooth, rather glaucous. Flowers yellow—pods cylindrical. This is the cultivated

Turnep. The juice of the roots fermented with sugar form a common sort of Cyder.

GENUS XVII. MUSTARD, *Sinapsis*. Pod 2-valved, sometimes 2-jointed, upper joint valveless—calyx spreading.

Species I. *Field Mustard*, *S. Arvensis*. It is chiefly this weed which so frequently covers our corn fields with its yellow flowers. May, June. Stem 1—2 feet high, branched hispid. Leaves ovate, *toothed nearly* lyrate, stalked, sessile above, Flowers yellow—pod 8 angled.

Species II. *White Mustard*, *S. Alba*. Frequent in waste places. July. Stem 12—18 inches high nearly glabrous. Leaves *pinnated*—lobes variously cut and toothed. Flowers large, yellow—pods with a large sword-shaped *beak*. It is cultivated in gardens as a salad herb, for winter and spring use.

GENUS XIX. RADISH, *Raphanus*. Pod valveless, many celled, jointed, becoming necklace-shaped—cells bony in a longitudinal series—calyx closed.

Species I. *Wild Radish*, *R. Raphanistrum*. Frequent in corn fields. June, July. Stem 1—2 feet high, branched, hispid. Leaves *simply* lyrate, rather rough. Flowers large, pale lemon yellow, veined with violet—petals obovate, lax—calyx bristle like—pod joints *smooth*.

CLASS XVI.

MONODELPHIA CONSISTING OF PLANTS WHOSE FILAMENTS ARE UNITED INTO ONE PARCEL, OR SET, MORE OR LESS COMPLETE.

In this class, the calyx is of the utmost importance, and is the part by which the different *genera* are principally distinguished. The orders are distinguished by the number of stamens, easily determined at their upper part, bearing the anthers, where they are always for a considerable distance, separate and distinct. All the genera hitherto discovered come under eight orders, but only three of them contain plants native in this Island viz *Triandria* with 3 stamens, *Decandria* with 10, and *Polyandria* with more than twenty.

ORDER I. PENTANDRIA, Five stamens.

GENUS I. STORK'S-BILL, *Erodium*. Calyx 5-leaved—blossom 5-petalled—filaments 10 sometimes united, 5 with and 5 without anthers, the anther-bearing ones with a scale at the base of each—awn of the seed-vessel *spiral, bearded* on the inside.

Species 1. Hemlock Stork's-bill, *E. Cicutarium*. Occasionally in sandy places.

August. About Strathaven, Tollcross &c. Whole plant *hairy*. Stems several 3—8 inches long, reddish, *prostrate*, thickish. Leaves pinnate, alternate—leaflets sessile, pinnatifid, cut—stipules ovate. Flowers in an umbel from 3 to 6, of a rose colour supported on a peduncle 2—3 inches high which is many flowered—petals obovate longer than the calyx.

ORDER II. DECANDRIA, Ten stamens.

GENUS II. CRANE'S-BILL, *Geranium*. Calyx 5-leaved—petals 5—stamens 10, connected, 5 alternately longer, each with a honied gland at the base—awn of the seed-vessel neither spiral nor bearded.

Species I. *Dusky Crane's-bill*, G. Phæum. Within the ruins at Blantyre Priory, abundant. June. Stem *erect*, 2 feet high, nearly cylindrical, with large red joints. Leaves soft—root ones with stalks, many cut—upper ones sessile, 3-cut. Peduncles 2 flowered—petals blackish red, claw white, marked with 5 lines—calyx hairy slightly awned—seed-vessels keeled wrinkled above, hairy below.

Species II. *Wood Crane's-bill*, G. Sylvaticum. In woods common. June. Banks of the Nethen; Clyde at Kenmuir; at Jerviston extremely abundant. Stems 1—2 feet high, *erect*, branched. Leaves nearly peltate, 5-lobed, deeply *serrated*, soft, hairy

paler beneath. Peduncles sometimes with more than 2 flowers—petals purple, veined with blood red, hairy at bottom—calyx leaves with *long* awns—style *shorter* than the stamens—seed-vessels hairy not wrinkled—seeds dotted.

Species III. *Meadow Crane's-bill*, G. Pratense. In meadows and bushy places abundant. July. Among the willows, below Hamilton bridge; by the Clyde at Uddingston &c. Stems 1—2 feet high, forked, swollen at the joints, tinged more or less with red. Leaves *peltate* many parted, wrinkled, pointed. Peduncles 2 flowered—petals very large, blue or pale purple—calyx leaves tipped by scarlet globules and terminating in an awn—seed-vessels hairy, not wrinkled—seeds dotted.

Species IV. *Shining Crane's-bill*, G. Lucidum. Rocks and walls. July. Rocks above Broomhill; at Cartlane Craigs; walls at Blantyre Priory. June. Stems 4—14 inches, weak, brittle, much branched, swollen at the joints, mostly fine red, and shining. Leaves 6-lobed, shining, thin, kidney-shaped, *rounded*—lower ones of a fine red. Flowers 2 to each peduncle, small rose-coloured—calyx wrinkled across—capsules many furrowed. The whole plant is sometimes red.

Species V. *Stinking Crane's-bill* or *Herb Robert*, G. Robertianum. Abundant in waste stony places, the whole summer. On the Avon opposite Barncluith &c. Stem 10—14 inches high, branched, blood-red, hairy, trailing. Leaves in *threes* or *fives*, 3-cut, *pinnatifid*. Flowers 2 on a peduncle—petals rose-coloured, rarely white, *not* notched—calyx awned 10-angled, seeds very smooth. It has a disagreeable rank smell when bruised. Infused as a tea, it is celebrated in nephritic and calculous complaints.

Species VI. *Dove's-foot Crane's-bill*, G. Molle. Common in waste places. July. About Covant burn &c. Leaves *kidney-shaped*, cloth-like, *lobed*—lobes 3-cut, downy down soft. Flowers small, purple, rarely white, notched—leaflets of the calyx ovate, 3-ribbed—capsules transversely wrinkled—seed smooth. A very common plant.

Species VII. *Small-flowered Crane's-bill*, G. Pusillum. Frequent about Cambuslang. June to September. Stems slender 6—12 inches long, mostly prostrate, swelling at the joints, often reddish. Leaves *kidney-shaped*, 5 to 7-lobed—lobes 3-parted. Flowers with only 5 anthers, very small, purple—petals notched—calyx awnless—capsules *keeled*, downy—seed smooth.

Species VIII. *Cut-leaved Crane's-bill*, G. Dissectum. Hedges and pastures. June, July. Abundant at Jerviston. Stems 6—12 inches high, branched, clothed with deflexed hairs. Leaves 5-parted—lobes 3-cut and *pinnatifid*. Flowers pale red, sitting among the leaves—petals notched—calyx awned, 3-ribbed—anthers purple—capsules smooth, hairy—seeds reticulately dotted.

Species IX. *Dove Crane's-bill*, G. Columbinum. Near Glasgow. June, July. Stem slender, mostly decumbent, rough with deflexed hairs. Leaves 5-parted, opposite, lobes deeply cleft into many *linear acute* segments. Flowers pale purple—petals *entire*—calyx awned—seeds reticulately dotted—capsules *glabrous*.

ORDER III. POLYANDRIA, More than 20 stamens.

GENUS III. MALLOW, *Malva*. Calyx double outer 3-leaved—capsules many united in a depressed whorl, *i. e.* circularly arranged.

Species I. *Common Mallow*, M. Sylvestris. Common in waste places. July, August. At Chatelherault and by the Railway Hamilton wood &c. Stem 2—3 feet high, *upright herbaceous*, branched. Leaves 7-lobed, *pointed*, rather palmate. Flowers large handsome—petals purple, *reverse heart-shaped*, 3 times as long as the

—leaf-stalks and flower-stalks *hairy*.
 plant was used as an esculent veget-
 among the Romans: its use among us
 medicine has been superseded by
 sea.

pecies II. *Round-leaved Mallow*, M.
indifolia. Near Raith &c. June to
 ember. Stems several, *prostrate*, 6—12
 as long, mostly simple, hairy. Leaves
kidney-shaped, *orbicular*, slightly 5-lobed.
 vers small, axiliary, on stalks 2—3
 ring together—petals flesh coloured,
 er than the calyx—peduncles in fruit
 downwards.

pecies III. *Musk Mallow*, M. *Moschata*.
 nilton Haugh; near Raith; rocks be-
 n Wellshot and Cambuslang &c. Au-
 . Stem 1—3 feet high, *erect*, slightly
 icked. Leaves *kidney-shaped* cut-
 ones 5-parted, *pinnately* many-cut.
 wers large rose coloured, very beautiful,
 luced towards the summit—petals obcor-
 -uniform—calyx *hairy*, outer leaves
 zr. Herb rough with hairs, odorous.

CLASS XVII.

DIADELPHIA CONSISTING OF PLANTS WHOSE FLOWERS ARE BUTTERFLY SHAPED, THE STAMENS OF WHICH ARE UNITED BY THEIR FILAMENTS INTO TWO SETS OR PARCELS.

The flowers of common Broom, Furze, or of the common garden Pea, if examined, will explain what is meant by a Butterfly, (or Papilionaceous) flower. The orders of this Class depend upon the number of the stamens; which are either five, six, eight, or ten. The last number is by far the most common; nine of the stamens being generally united, and the tenth standing by itself.

ORDER I. HEXANDRIA, Six stamens.

GENUS I. FUMITORY, *Fumaria*. Calyx of two leaves, inferior—petals 4, irregular, one of them bellied at the base—each filament bearing 3 anthers.

Species I. *Common Fumitory*, *F. Officinalis*. Frequent in fields and gardens, especially in seed beds where it is often mistaken for Carrots. May to August. Stem 6—12 inches high, erect angular, *branched, spreading*. Leaves much divided, more

than *twice* compounded—leaflets wedge-shaped, lanceolate, cut. Flowers rose-coloured, blood red at the tip, keel green, in a *loose* spike of about 12 opposite to the leaves—fruit bearing pedicels *erect*, *twice* as long as the bracteas. Juice of the plant used as a cosmetic; also as an alterative, especially in scurvy, and chronic diseases.

Species II. *Ramping Fumitory*, F. Cap-reolata. Fields and bushy places. June to September. Hedge near Motherwell &c. Stem trailing or *climbing*, 1—3 feet long, very much branched, angular. Leaves much divided—segments often in threes, reverse ovate, wedge-shaped, cut, broad green. Flowers 5—10 flesh coloured—the fruit bearing pedicels *recurved*, *scarcely* longer than the bracteas—spike loose—calyx large—pericarp shining.

ORDER II. OCTANDRIA, Eight stamens.

GENUS II. MILKWORT, *Polygala*. Calyx 5-leaved, with 2 of the leaves shaped like wings and coloured—corolla-lower-lip, bearded beneath.

Species I. *Common Milkwort*, P. Vulgaris. Frequent in hilly pastures. June, July. Carriage way leading to Chatelherault nearly opposite Barncluith &c. Stems 4—8 inches long, several, spreading herbaceous. Leaves *linear lanceolate*, acute, numerous, dark green. Flowers in a ter-

minal spike, *erect*, blue, purple, red, or white—calyx-wings *ovate* 3-ribbed, as long as the corolla—corolla beautifully crested. A curious little plant.

ORDER III. DECANDRIA, Ten stamens.

GENUS III. GREEN-WEED, *Genista*. Calyx 2-lipped, upper lip with 2 deep segments, lower one with 3 teeth—standard oblong—pod flat or turgid, many-seeded.

Species I. *Needle Green-weed*, *G. Anglica*. Near Hyndford bridge, and on the moors on Cathkin hills. June. Stems ascending, about a foot high, very spinous—spines *simple*, none on the flowering branches. Leaves very small *ovate-lanceolate*, glabrous. Flowers small, yellow, somewhat racemose—pod oval, very turgid. Petty-whin.

Species II. *Dyer's Green-weed*, *G. Tinctoria*. Likely to be found in this district, although I know of no nearer station than Blacket House Middleby, Annandale. July. Stems erect, 1—2 feet high, slender, glabrous between round and angular, branched—branches *round*, streaked, upright, *unarmed*. Leaves rather distant, small, lanceolate, glabrous, edges sometimes a little downy. Flowers nearly sessile—calyx with 5 sharp teeth—pod glabrous. The flowers dye wool yellow.

GENUS IV. BROOM, *Cytisus*. Calyx 2-lipped, the upper lip nearly entire, or with

2 small teeth, lower one 3-toothed—standard large broadly ovate—keel very blunt including the stamens—pod flattened many seeded.

Species I. *Common Broom*, *C. Scoparius*. Abundant on dry hills and bushy places. June. Three to 6 feet or more high. Branches long, *angled* straight, green. Leaves *ternate*, *stalked*, upper ones simple, leaflets oblong. Flowers large bright yellow, axillary shortly pedicillate—at the margin. Tops and seeds in infusion diuretic, serviceable in dropsy; when sheep are pastured on it, when in bloom the rot is prevented.—Badge of the Highland Clan Forbes.

GENUS V. WHIN, *Ulex*. Calyx of 2 leaves, with a small scale or bractea on each side at the base—pod turgid, scarcely longer than the calyx.

Species I. *Common Whin*, *Furze*, or *Gorse*, *U. Europaeus*. Abundant on heathy places, especially in sandy or gravelly soils, during the summer. Shrub 3—4 or more feet high—branches very close tangled—twigs *upright*—spines very sharp, ever-green. Leaves *lanceolate linear*, villous. Flowers bright yellow, when first blown, smelling like the kernel of the Cocoa Nut—calyx teeth very small, connivent—bracteas ovate, weak. A superb shrub when in full flower.

GENUS VI. REST-HARROW, *Ononis*. Calyx 6-cleft, its segments linear—standard large, striated—pod turgid, sessile, few-seeded.

Species I. *Rest-harrow*, *O. Arvensis*. Frequent in barren pastures and borders of fields. June—August. Road sides about Raith &c. Stem about a foot high, annual, slender, purple, branched, *hairy*—twigs grow spinous. Leaves small, ternate below, *simple* above, *serrate*, *entire* at the base, petiolate. Flowers large, rose coloured, on axillary, solitary peduncles—pod scarcely exceeding the calyx, pilose. It is also called Cummock. The bark of the root is a powerful diuretic.

GENUS VII. KIDNEY-VETCH, *Anthyllis*. Calyx inflated, 5-toothed, 'mouth connivent pod small, 1 or 2 seeded, closed up in the calyx.

Species I. *Kidney-vetch*, *A. Vulneraria*. Dry pastures. June—August. At Bothwell, Tollcross, Quarry Philipshill, and between Kittoch and Carmunnock. Stems *herbaceous*, several, 3—8 inches long, round, decumbent, *hairy*—hairs close to the stem. Leaves lyrate pinnate, glaucous, *hairy* beneath—leaflets not in the least cut. Flowers yellow in two dense roundish *heads*, in close contact—heads many *flowered*, with bractees—bractees palmate

—calyx white, hairy. Also called *Ladie's Finger*.

GENUS VIII. BITTER-VETCH, *Orobis*. Calyx blunt at the base, the upper teeth deeper and shorter—style linear, cylindrical, downy above.

Species I. *Tuberous Orobis*, *O. Tuberosus*. Frequent in woods and hilly pastures. June. By the walks round the woods at Jerviston &c., abundant. Stem 10—14 inches high, slender, winged, angular. Leaves *pinnated*, with from 2—4 pair of leaflets—leaflets *lanceolate*, *pale*, *glaucous* beneath—stipules nearly arrow-shaped, 4 or 5-toothed. Flowers racemous, one-rowed, purplish red growing blue, finely veined—calyx mostly dark purple—pod long, pendulous, cylindrical, black. Tubers nutritive but rather woody. It is called *Cormeille* and *Caperilla* in the Highlands.

Species II. *Wood Bitter-vetch*, *O. Sylvaticus*. Cartlane Craigs and woods at the Falls of the Clyde. July. Stems numerous, slightly *branched*, *trailing*, *hairy* at bottom. Leaves pinnate, *hairy* with 7—10 pairs of leaflets—leaflets *ovate oblong*, *pointed*, *hairy* beneath—stipules nearly arrow-shaped. Flowers 6, 7, or more, on the same common peduncle, pendulous, on slender pedicels, reddish on the outside,

white with purple veins within—calyx hairy—pod ovate, 3-seeded.

GENUS IX. VETCHLING, *Lathyrus*. Calyx 5-cut, 2 upper lobes short—style flat, broad at the tip, hairy or downy before—pod oblong many-seeded.

Species I. *Meadow Vetchling*, *L. Pratensis*. Common in pastures and bushy places. July, August. Back-planting near Bothwell bridge &c. Stems slender, 2—3 feet long, much branched, acutely angled. Leaves 1-paired—leaflets *lanceolate*, 3-ribbed, ending in a simple or divided tendril stipules *arrow-shaped*, as long as the leaflets. Flowers rather large, gold-yellow, on long many flowered stalks—calyx hairy—pod smooth. Being very vivacious it has been proposed for forage; but cattle are not fond of it.

GENUS X. VETCH, *Vicia*. Calyx tubular, 5-cut, the 2 upper lobes short—style thread-like, hairy above and below the tip—pod oblong, many-seeded.

Species I. *Wood Vetch*, *V. Sylvatica*. Rocks between Corhouse and Bonnington on the Lesmahagow side of the Clyde; Cartlane Craigs; rocks by the Avon Hamilton wood. July, August. Flower-stalks longer than the leaves, many flowered. Stems 3—6 feet long or more, branched, climbing by means of its branching tendrils.

Leaves pinnate, 6—8 or 10 pair of leaflets—leaflets *elliptical*, *oblong* rather pointed—tendrils branched. Flowers spreading white, purple, or blue, veined with flesh colour, very beautiful—smooth 4-seeded—stipules *lunate*, bristle-like, toothed. The most beautiful climber of this Island, both leaves and flower being extremely elegant.

Species II. Tufted Vetch, V. Cracca. Frequent in hedges and bushy places. July, August. Flower-stalks *longer* than the leaves, many-flowered. Stem weak, 2—3 feet high, climbing, very leafy. Leaves many paired, silky—leaflets lanceolate—stipules nearly arrow-shaped, linear lanceolate, not cut, villous. Flowers blue, very numerous, keel whitish, marked on each side at the tip, with a deep violet spot—calyx coloured, rather naked—pod smooth.

Species III. Cultivated Vetch, V. Sativa. In dry fields also cultivated. June. Flowers axillary, nearly sessile. Stems varying 10—14 inches high, pubescent, angular and furrowed. Leaves many paired, lower ones *retuse*—leaflets ovate truncated, pointed—tendrils 2 or 3-cut—stipules nearly arrow-shaped, toothed with a dark *spot* beneath. Flowers solitary or in pairs purple—pods rough, generally in *pairs*, sessile, upright—seeds smooth slightly

compressed. Sown along with corn as forage for cattle.

Species IV. *Bush Vetch*, V. *Sepium*. Frequent in woods and bushy places. July. At Cadzow Castle &c. Flowers axillary, nearly sessile. Stems 1—2 feet high, slightly branched, climbing. Leaves many paired—leaflets ovate, blunt, outer ones *smallest*. Flowers purplish blue, 3—4 or even 6 together, scarcely stalked—calyx hairy—pods upright—seeds globular smooth.

GENUS XI. TARE, *Ervum*. Calyx teeth long unequal—stigma capitate, downy all over.

Species I. *Hairy Tare*, E. *Hirsutum*. In corn fields and pastures. June. At Craignethan Castle &c. Stems slender, varying from a few inches to 1 or 2 feet long, weak, nearly glabrous. Leaves pinnate—leaflets numerous, *hairy*, blunt. Flowers very insignificant, purplish blue, 3 to 7 on each peduncle—pods hairy, *two* seeded. I have never met with the E. *Tetraspermum*.

GENUS XII. BIRD'S-FOOT, *Ornithopus*. Calyx 5-toothed—pods slender, round, jointed, resembling a bird's foot—keel very small.

Species I. *Small Bird's-foot*, O. *Perpusillus*. In sandy pastures. May. In a

sandy field at Tollcross, by the Hamilton road. Herb downy. Stems prostrate, 3—6 inches long, much branched. Leaves pinnate with an odd leaflet, and 6 to 9 pair of leaflets. Flower very small, white, veined with pink, in heads, bracteated—pods 4 or 5, resembling a bird's foot.

GENUS XIII. MILK-VETCH, *Astragalus*. Keel of the blossom blunt—pod 2-celled; cells formed by the inflexed margin of the lower suture.

Species I. *Sweet Milk-vetch*, *A. Glycyphyllos*. On the green before Chatelherault. July. Stem prostrate, 2—3 feet long, branched, flexuose, furrowed. Leaves pinnate longer than the peduncles—leaflets 5—7 pair, with an odd one, oval, rather large, bright green. Flowers numerous yellow, on axillary peduncles—calyx glabrous—pods somewhat triangular, inflated, *glabrous*, an inch long. Wild liquorice.

GENUS XVI. TREFOIL OR CLOVER, *Trifolium*. Calyx 5-toothed—keel simple, shorter than the wings or standard—pod 1 or 2 seeded, very small, covered with the calyx.

Species I. *Common Melilot*, *T. Officinale*. Road side between Rutherglen and Farm. July. Stem erect branched 1—2 feet high, angular and furrowed. Leaves ternate; petioled alternate—leaflets smooth, *obovate*

oblong, toothed. Flowers in *racemes*, small, drooping varying in colour but generally of a golden yellow, each having a small awl-shaped bractea—calyx hairy—pod *naked*, 2-seeded, pendulous and elliptical. Rare about Hamilton.

Species II. *Dutch Clover*, T. Repens. Very common in meadows and pastures, through the summer. Stem *creeping*. Leaves on long stalks—leaflets often marked with a dark spot at their base, with a white line bordering it near the middle. Flowers in round *umbellate* heads, white, hanging down when they begin to wither—pods 3-4-seeded. This is the common white Clover. Its seeds seem to be universally distributed in this district, for if a little lime or manure be laid down on the most barren or elevated spots, a good crop of Dutch Clover springs up. It is the Shamrock of the Irish; although some have supposed that Wood Sorrel (*Oxalis Acetosella*) is the *true* Shamrock.

Species III. *Red Clover*, T. Pratense. Cultivated among Hay abundantly. Stem ascending. Leaves on longish stalks—leaflets oval nearly entire, often marked with a whitish lunate spot. Flowers in a dense *ovate* head, reddish purple—teeth of the calyx *bristle-shaped*, lower ones *longer*

than the rest. This is the common red Clover.

Species IV. *Hare's-foot Trefoil*, T. Arvense. Corn fields and dry pastures. August. By the garden wall at Chatelherault. Stem 5—12 inches high, mostly erect, much branched, villose, hairy. Leaves on short stalks—leaflets *narrow reverse ovate*, hairy. Flowers very minute, white or flesh coloured, in many soft hairy heads or spikes which are nearly cylindrical—calyx teeth *bristle-like*, equal, rather longer than the blossom.

Species V. *Hop Trefoil*, T. Procumbens. Frequent in dry sandy pastures. July. Old quarry at Coalhill Jerviston &c. Stem 4—12 inches long, *procumbent*, diffused, ends ascending. Leaves on short stalks—leaflets toothed reverse ovate, the middle one with a leaf-stalk—stipules somewhat ovate, not cut, fringed. Flowers in oval heads small, yellow—standard furrowed, bent inwards, reverse heart-shaped—calyx teeth unequal. The heads of flowers in their more advanced state, remain long in a withered condition, thus assuming in some respects the appearance of hops.

Species VI. *Slender Yellow Trefoil*, T. Filiforme. Abundant in damp sandy places. June, July. Quarry by the Calder at Orbiston buildings &c. Stem 6—12 inches

long, *procumbent*, very slender, mostly glabrous. Leaves on short pubescent stalks—leaflets reverse-ovate or reverse-cordate, glabrous, denticulate, the middle ones sessile or on a short partial stalk. Flowers yellow, small, in somewhat *hemispherical* heads, rather lax, the peduncles *capillary*—standard deflexed, somewhat sulcate, persistent. Dr Hooker and Mr Greville regard this, and the *T. Minus* of the English Botany as forming only one species.

GENUS XVI. BIRD'S-FOOT-TREFOIL, *Lotus*. Calyx tubular, persisting 5-cut—wings connivent above, shorter than the standard—keel acuminate—pod cylindrical, somewhat spongy within, and imperfectly many celled.

Species I. *Common Bird's-foot-trefoil*, *Lotus Corniculatus*. Abundant in pastures. June—August. Stem 3—8 inches long, *decumbent solid*. Leaves on short stalks—leaflets obovate, pubescent, the two opposite ones closed together. Flowers bright yellow, 4—5 in a depressed head,—claw of the standard *ovate*, fulvous—pod stiff, larger towards the end. Cattle are fond of this plant. The flowers turn green in drying like those of indigo.

GENUS XV. MEDICK, *Medicago*. Calyx nearly cylindrical, 5-cut—keel distinct from *the standard*—pod many seeded—*falcate* or *spiral* twisted.

Species I. *Black Medick or Nonsuch*, *M. Lupulina*. Frequent in fields and by road sides. May—August. Stem 6—16 inches long, *prostrate* somewhat angular. Leaves on short stalks—leaflets ovate, slightly toothed at the tip. Flowers small, yellow, in an *ovate* spike or head—pods kidney-shaped, 4-seeded, hairy, black or dark brown. This is also sown for sheep food in open fields.

CLASS XVIII.

POLYADELPHIA, CONSISTING OF PLANTS
HAVING THEIR STAMENS UNITED INTO
MANY, OR AT LEAST MORE THAN TWO
SETS OR PARCELS.

ORDER I. POLYANDRIA, many stamens.

GENUS I. ST JOHN'S-WORT, *Hypericum*.
Calyx 5-parted—petals 5—filaments many,
connected at the base into 5 bundles.

Species I. *Square-stalked St John's-wort*,
H. Quadrangulum. Bushy places and
river sides. July By the Rail way Ham-
ilton wood &c. Stem 1—2 feet high,
four sided, stiff, rather branched. Leaves in
pairs, ovate, dotted, dots transparent, not cut.

Flowers terminal, yellow, sometimes spotted with black—*styles* 3—calyx leaves lanceolate, pointed.

Species II. *Perforated St John's-wort*, H. *Perforatum*. Common in woods and hedges. July. Ross wood &c. Stem 1—2 feet high, upright 2-edged. Leaves elliptic, oblong, blunt, dotted, dots transparent, edge black. Flowers in a terminal panicle, golden yellow with purple spots and lines, crenated—anthers glandular—calyx lobes elliptical blunt. The leaves when held between the eye and the sun seem to be punctured with small holes. The flowers tinge spirit and oil purple. The herb in flower infused in oil forms an excellent vulnerary balsam.

Species III. *Doubtful St John's-wort*, H. *Dubium*. Woods at Skellyton and Stonebyres. August. Stem 1—2 feet high, imperfectly 4-sided—shoots bright scarlet. Leaves blunt, slightly spotted at the edge, not dotted. Flowers yellow streaked with dark purple—petals not notched—calyx lobes elliptical, blunt.

Species IV. *Trailing St John's-wort*, H. *Humifusum*. Gravelly, heathy and boggy pastures. July. Hamilton wood &c. Stem 4—8 inches high, slender, 2-edged, trailing, herbaceous, branched, glabrous. Flowers few, small, pedicelled, golden yellow.

low,—anthers not glandular—calyx lobes oblong, obtuse. The leaves are sometimes 3 in a whorl.

Species V. *Hairy St John's-wort*, *H. Hirsutum*. Between Cathcart bridge and Mearns; about Blantyre &c. Stem 1—2 feet high, *round*, *downy*, stiff, branched. Leaves rather large, opposite, ovate, obtuse ribbed, hairy above, pubescent beneath, spotted, dots transparent. Flowers numerous, in terminal crowded panicles, small, golden yellow—calyx serrated glandular.

Species VI. *Handsome St John's-wort*, *H. Pulchrum*. Woods on clay soils. July. Cobbleton wood Jerviston &c. Common. about Hamilton. Stem 6—16 inches long, smooth, upright, *round*, reddish. Leaves rigid, glabrous, *cordate*, *obtuse*, embracing the stem, dotted, beneath glaucous. Flowers in a stiff panicle, golden yellow, red on the outside—anthers red—calyx lobes blunt, serrated, *fringed* with glands. This is a hardy and very beautiful plant.

CLASS XIX.

SYNGENESIA, CONSISTING OF PLANTS WHOSE FLOWERS ARE COMPOUND.

These are composed of a number of small flowers, or florets, all placed upon the same receptacle, and within one common calyx. The stamens are five in number with distinct filaments, but the anthers or superior part of the stamens are united side by side, composing a hollow cylinder, through which the style of the pistil passes. The Dandelion (*Leontodon Taraxacum*) common Gowan (*Bellis Perenne*) and the blue Bottle (*Centaurea Cyanus*) will furnish an example of the flowers belonging to this class.

ORDER I. AEQUALIS, All the flowers perfect.

1. Such as have all the blossoms ligulate *i. e.* flat or strap-shaped—as in the Dandelion.

GENUS I. GOAT'S-BEARD, *Tragopogon*.
Calyx of 8 or 10 leaves alternately interior, all joined at the base—receptacle naked, pitted—down feathery, flat, stalked, with about 32 rays—fruit longitudinally striated.

Species I. Yellow Goat's-beard, *T. Pruriens*. Among the tall trees on the brink

of Clyde at Daldowie; and at Clyde Iron Works. June. Whole herb smooth and very even. Stems several, branched, 18 inches or 2 feet high, leafy, round, often tinged with purple. Leaves undivided, glabrous, channelled, pointed, dilated at bottom so as to embrace the stem. Flowers yellow large and handsome, opening at day break, and closing before noon—external florets larger and all 5-toothed at the tip—peduncles cylindrical—calyx leaves as long as the flowers in the circumference. Before the stems shoot up the young shoots are said to be a good asparagus. Originally a native of Siberia.

GENUS II. *PICRIS*, *Picris*. Calyx double—inner of many compact, upright, equal scales—outer of several lax, small, linear ones—receptacle flat, naked, pitted—down sessile, slightly feathery—fruit transversely streaked.

Species I. *Hawk-weed Picris*, *P. Hieracioides*. Frequent by road sides and borders of fields. August. Stem 2—3 feet high, *rough*, with hooked bristles, round, furrowed, much branched—branches furrowed, purple on their upper side and in their axils. Leaves very rough, lanceolate, toothed, waved—the stem ones embracing the stem, bent back. Flowers yellow in a leafy corymbus, on very *scaly* peduncles.

GENUS III. SOW-THISTLE, *Sonchus*. Calyx tiled with many scales, swelling at the base—scales, unequal in 2 or 3 series—receptacle flat, with hollow dots, naked—down hair-like, sessile, soft, soon disappearing.

Species I. *Corn Sow-thistle*, *S. Arvensis*. Frequent in Corn fields. August. At Uddingston &c. Stems 3—4 feet high, hollow, with glandular hairs, nearly simple. Leaves *runcinate*, *heart-shaped* at the base, doubly fringed—upper ones embracing the stem. Flowers large and conspicuous, towering above the corn, of a bright golden colour, externally reddish—calyx and peduncles covered with many globular hairs—down smooth.

Species II. *Common Sow-thistle*, *S. Oleraceus*. Common in fields, gardens, and waste places. June—September. Stem 1—2 feet high, branched, smooth, tender, hollow, leafy, sometimes purplish. Leaves glabrous, *oblong*, *lanceolate*, embracing the stem, slightly sinuated, *fringed* at the edge. Flowers small, yellow, only open in fine weather—calyx quite glabrous—peduncles clothed with wool, which soon disappears. A very common weed in gardens—rabbits are fond of it.

GENUS IV. DANDELION, *Leontodon*. Calyx imbricated with scales, of which the

outer are frequently lax and flaccid—receptacle flat, pitted, naked—seed down hair-like, stalked, falling off.

Species I. *Common Dandelion*, L. *Taraxacum*. Grass lands and road sides, every where, all summer. Leaves all from the root, *runcinate*, glabrous toothed. Flowers large yellow, one to each stalk or scape—scales of the calyx *bent back*. The branched leaves and roots make an excellent salad—they are very diuretic—the juice alterative. I have gathered specimens of this common plant with 2 flowers to each scape.

Species II. *Marsh Dandelion*, L. *Palustre*. About Jerviston and Holytown, all the summer. Very like the above species, but differing from it in the following respects:—plants more slender—outer scales of the calyx not bent back but closely pressed upwards—Leaves less *runcinate*, often nearly entire—flowers and heads of seeds smaller. This is not a well marked species.

GENUS V. *HAWKBIT*, *Apargia*. Calyx ad with scales at the base, innermost scales small, outer ones smaller—receptacle naked, toothed—down feathery, sessile, unequal.

Species I. *Rough Hawkbit*, A. *Hispida*. Abundant in meadows and pastures. June. The Calder below Camp Bleachfield &c. Leaves all from the root, *runcinate* or pin-

natified, oblong, hirsute—hairs forked. Flowers large, bright yellow, drooping and reddish before expansion—afterwards upright—florets with a *tuft of hairs* at the top of their tube, the summit terminating in 5 teeth at the back of each of which is a triangular cluster of brown glands—flower scape 6—10 inches high, erect, simple 1-flowered—involucre rather hairy.

Species II. *Deficient Hawkbit*, A. Hirta. About Glenhove New Monkland, and by the banks of the burn which borders the N. side of the Parish. August. Leaves all from the root *lanceolate, sinuately toothed*, hairy, hairs simple. Flowers small, drooping before expansion, reddish beneath, *not* hairy at the tube nor glandular at the tip—scape or flower stem 6—8 inches high, single flowered, ascending glabrous—the outer pericarps which have scales instead of down are often abortive and smooth—the inner ones are beautifully striated, and marked with raised dots. This has been made a new genus under the names *Thrinicia* or *Thrica*, in allusion to the feathery down.

Species III. *Autumnal Hawkbit*, A. Autumnalis. Frequent in meadows and pastures. August. About Deadwaters Ross &c. Leaves all from the root, *spreading, lanceolate toothed or pinnatifid*,

smooth or roughish. Flowers rather large, yellow, those of the circumference reddish on the outside—flower-stems 1—3, spreading furrowed, roughish, 10—20 inches long, dividing into 2 or 3 *branches* which are hollow and scaly—calyx tapering into the peduncle. This now constitutes one of the genus *Virea* of Adanson—but this and the former species have changed their names so often that they may justly be said to belong to the *alias* family.

GENUS VI. HAWK-WEED, *Hieracium*. Calyx becoming ovate—scales many, linear, oblong, imbricate—receptacle roughish, dotted—down sessile, bristle-like, greyish, remaining.

Species I. *Mouse-ear Hawk-weed*, *H. Pilosella*. Frequent on banks and dry pastures. May—July. Mount at Chateherault; grass plots at Barncluith gardens &c. Leaves all from the root, obtuse, *ovate*, *not cut*, light green above, white and downy beneath. Flowers of a pale lemon yellow—outer before opening streaked with red, each floret having 6 teeth at the end—flower stem 1-*flowered*, leafless, hairy 4—7 inches high. A number of creeping stolons are thrown out from the root, which are leafy and hairy.

Species II. *Wall Hawk-weed*, *H. Murorum*. Rocks on the Avon below Cadzow

Castle; rocks at Cartlane Craigs; wall at Limekills Kilbride. July. Stem 8—20 inches high, furrowed, *branched upwards*, few leaved, mostly one. Leaves ovate, nearly heart-shaped at the *base*, villous beneath, toothed, teeth radiating—root ones many, roundish ovate—all of them varying much in their tothing and hairyness. Flowers rather large, deep yellow—calyx and peduncles downy *mixed* with a few glandular bristles.

Species III. *Wood Hawk-weed*, *H. Sylvaticum*. Woods and walls. Woods Lanark, Lesmahagow, Strathaven and New Monkland. August. Stem 1—2 feet high or more, branched upwards, rather slender, slightly hairy *above*, with longish white hairs at the *base*. Leaves *lanceolate* or ovate-lanceolate, *toothed* or entire, *hairy* or nearly glabrous. Flowers not large, yellow somewhat corymbose—calyx slightly pubescent—peduncles tomentose, sometimes almost cottony.

Species IV. *Marsh Hawk-weed*, *A. Paludosum*. Abundant by waters and in wet rocky places. August. By Barncluith burn &c. Stem 1—2 feet high, furrowed, *hollow*, *angular*, often reddish, glabrous. Leaves quite smooth, heart-shaped, *stem-clasping*, toothed, lower ones sometimes *lyrate*. Flowers yellow—calyx clothed

with black bristles. A very common species, easily known by the above marks.

Species V. *Shrubby Hawk-weed*, *H. Saubaudum*. Woods and rough places. September. At Daldowie; fir plantation behind Jerviston house and in the woods Jerviston &c. Stem 2—3 feet high, striated, stout and woody, spongy within, mostly simple, *hairy* especially below, very leafy. Leaves *ovate*, *lanceolate*, *toothed-serrate*, *slightly* embracing the stem, pale and rough beneath, rather glabrous above. Flowers rather numerous, golden yellow—calyx slightly hairy—peduncles with *short* pubescence somewhat *intermixed* with long hispid hairs.

GENUS VII. HAWK'S-BEARD, *Crepis*. Calyx swelling at the base, surrounded with deciduous scales, obscurely ribbed and furrowed—receptacle naked—down simple sessile.

Species I. *Smooth Hawk's-beard*, *C. Tectorum*. Common on walls, roofs, pastures and rubbish. July—September. Hedge banks near Raith &c. Stem 1—3 feet high, erect, furrowed, *glabrous*, branched. Leaves light green, *glabrous*—root ones *lanceolate*, *runcinate*; lobes ascending—stem ones *linear* thread-like, *arrow-shaped*, toothed, embracing the stem, diminishing upwards. Flowers small, yellow, in a kind of loose

corymb—calyx pubescent. A very common plant of an ash-coloured green.

GENUS VIII. CAT'S-EAR, *Hypchoeris*. Calyx oblong, scales many, imbricated, keeled, muricated—receptacle rather convex, chaffy, chaffs nearly as long as the calyx, falling off—down stalked, feathered, rays thread-shaped.

Species I. *Long-rooted Cat's-tail*, *H. Radicata*. Frequent in meadows, pastures and by way sides. July. Old Oaks Hamilton wood &c. Root long, spindle-shaped. Leaves all from the root, narrow-oblong, *runcinated, rough*, blunt, spreading. Flowers large, bright yellow—scapes many 10—20 inches high, branched, glabrous, scaly upwards and swelling beneath the calyx. The flowers are solitary nearly sessile, on the side. This is one of the genus *Achyrophorus* of Scopoli.

GENUS IX. NIPPLE-WORT, *Lapsana*. Calyx ovate, cornered—scales of the tube 8 in a single row—of the base 4, 5 or 6 very short—receptacle naked—fruit 3-sided striated, quickly falling off—no down.

Species I. *Nipple-wort*, *Lapsana Communis*. Abundant in gardens and fields. July. Stem 2—4 feet high, stiff, furrowed, erect, *branched*, rather glabrous. Leaves thin in texture—root ones lyrate—stem ones ovate, petioles, angularly toothed—

floral leaf linear lanceolate, 1 at the base of each peduncle. Flowers small yellow—florets from 15 to 18—peduncles slender—calyx rigid glabrous. At Constantinople it is said to be eaten raw just before coming into flower—used in Persia to cure Ulcerated breasts.

GENUS X. SUCCORY, *Cichorium*. Calyx of 8 scales surrounded by 5 smaller ones at the base—receptacle naked or slightly hairy—down chaffy, chaffs many in a double series, much shorter than the seeds.

Species I. *Wild Succory*, *C. Intybus*. In a field near Belvidere, and in one near Tollcross. July, August. Stem 1—3 feet high, upright, rigid, crooked, angular, roughish to the touch, and generally much branched. Leaves of the stem small, cordate, acute, amplexicaul—radical leaves numerous, roughish, *runcinate*, main rib rather hirsute. Flowers large, fine blue, very handsome, generally in pairs, *sessile*, in the bosom of the upper leaves. Cultivated in France for Cattle; and first introduced for the same purpose into this country by Arthur Young Esqr. in 1788.

2. Such as have the Corollas all tubular, and generally spreading so as to form a hemispherical head.

GENUS XI. BURDOCK, *Arctium*. Calyx globular; the scales furnished at the end

with inflected hooks—receptacle chaffy—down simple.

Species I. *Burdock*, A. *Lappa*. Common by road sides, on rubbish, and ditch banks. July, August. Hedge at Haughhead &c. Stem 3—4 feet high, stout, much branched in a bushy manner. Leaves very large, *alternate*, rough, *undulated*, ribbed and whitish, downy beneath. Flowers small, purple, with a white tube. The globose calyx is called a *burr*—it sticks most pertinaciously to the clothes by means of its hooked scales. Few animals except the Ass will touch this plant.

GENUS XII. SAW-WORT, *Serratula*. Dioecious. Calyx nearly cylindrical, imbricate, awnless—receptacle chaffy or hairy, flat—seed down feathered or toothed.

Species I. *Common Saw-wort*, S. *Tinctoria*. On the Clyde between Uddingston and Daldowie. August. Root thready—Stem 2—3 feet high, branched, stiff and straight. Leaves lyrate, acutely serrated, smooth at the base, mostly pinnatifid, rarely not cut, terminating lobe very large, Flowers purple in a corymbus, even-topped—outer scales of the involucre ovate appressed, inner ones linear coloured. It is used to produce a yellowish dye in Sweden.

GENUS XIII. THISTLE, *Cnicus*. Calyx *tumid*, imbricated with spinous scales—re-

ceptacle hairy—seed-down *feathery*, soon falling off. By some called *Cirsium*.

Species I. *Creeping Thistle*, *C. Arvensis*. Very common in cultivated fields and by way sides. July. Root creeping—Stem 2—3 feet high, round, branched, paniced. Leaves without stalks, pinnatifid, hispid, toothed, waved, spinous, rather woolly beneath. Flowers purple, rarely white—calyx *ovate*, outer scales *spinous*. This is the common thistle productive of so much mischief to the agriculturist.

Species II. *Spear Thistle*, *C. Lanceolatus*. Common by way sides. July, August. Stem 2—4 feet high, erect, stout, branched, hairy. Leaves hispid running down the stem, pinnatifid, with a long sharp point like a spear—lobes 2-cut, straddling, spinous. Flowers purple or white—calyx large ovate terminal—scales spinous, spreading—seed down cobweb-like. This species is more common by way sides and in barren places than in fields. The bur-thistle.

Species III. *Marsh Thistle*, *C. Palustris*. Common in damp fields and pastures. July, August. Stem 3—5 feet high, branched, many angled, hirsute with abundance of long white hairs, prickly, variegated longitudinally with green and purple. Leaves running down the stem, hispid, *pinnatifid*, dark green, long, narrow, edge

spinous, lobes sinuated. Flowers in *clusters*, perfectly harmless, small, dark purple—calyx *ovate*, its scales ovate-lanceolate, appressed. Like most of the thistles it varies with white flowers.

Species IV. *Melancholy Thistle*, *C. Heterophyllus*. At Daldowie. July. Stem 2—3 feet high, upright, nearly simple, cottony. Root leaves stalked—stem ones *clasping* the stem, heart-shaped, lanceolate, serrated, fringed, cottony beneath, green above. Flower large nodding, mostly *solitary*, purple, terminal, drooping becoming upright—calyx ovate, dark green, slightly downy, the scales lanceolate, erect, not spinous. Very rare in this quarter.

GENUS XIV. THISTLE, *Carduus*. This genus is in every respect similar to the former genus, except the seed down, which is here *rough* not feathery.

Species I. *Musk Thistle*, *C. Nutans*. Dry pastures, not common. July, August. At Mauldslie. Stem 2—3 feet high; slightly branched, cottony, interruptedly winged. Leaves greenish on both sides *interruptedly* decurrent, spinous. Flowers drooping, solitary, large, purple, smelling like musk in hot weather—peduncle woolly—scales of the calyx lanceolate, cottony, ending in broad leafy points.

Species II. *Wetted Thistle*, *C. Acanthoides*. Waste places rather rare. July. Stem 2—4 feet high, branched, interruptedly winged. Leaves *decurrent, sinuate, spinous*, smooth, green on both sides. Flowers small, pale purple, crowded on the top of the stem—calyx globose, nearly sessile, the scales *linear, recurved*, somewhat cottony. The whole plant is ash or gray coloured and very prickly.

Species III. *Small-flowered Thistle*, *C. Tenuiflorus*. Fields and way sides, not common. July, August. Stem 3—4 feet high, slightly branched. Leaves *decurrent sinuate, spinous*, cottony beneath, very green above. Flower in mostly terminal clusters, sessile, small, pale purple or whitish—calyx nearly cylindrical, the scales lanceolate, erect, glabrous, ending in a sharp spine. This species is commonest near the sea.

GENUS XV. COTTON THISTLE, *Onopordum*. Calyx globose, becoming depressed—the scales awl-shaped lax spinous—receptacle flat, honey combed—seeds 4-sided—down hair-like, rough.

Species I. *Cotton Thistle*, *O. Acanthium*. Waste ground and way sides occasionally. August. Near the Coach-house Barneluth &c. Stem 4—5 feet high, winged, edges of the wings spinous. Leaves *decurrent, sinuated*, woolly on both sides, toothed.

Flowers large, solitary, terminal, purple, upright—scales of the calyx spreading, *subulate*, very numerous, ending in spines. The whole plant is covered with a white woolly down which is easily rubbed off. This is the *Scotch Thistle* of our gardens.

GENUS XVI. BUR-MARIGOLD, *Bidens*. Calyx of many scales, with long weak spreading leaves or bracteas at the base—blossoms sometimes with a floscule or two in the ray—fruit with from 2—5 rough awns.

Species I. *Nodding Bur-marigold*, *B. Cernua*. Frequent in damp marshy places. June—August. Ditches at Deadwaters Ross &c. Stem 1—2 feet high, erect, branched, slightly hispid. Leaves ovate-lanceolate, *serrated*, slightly connate at the base. Flowers *drooping*, large, greenish-yellow, solitary, surrounded with a number of long weak leaves or bracteas—bristles of the fruit about 3, erect.

GENUS XVII. HEMP-AGRIMONY, *Eupatorium*. Calyx imbricating—florets few—receptacle naked—down rough or feathery.

Species I. *Hemp-agrimony*, *E. Cannabinum*. In a marshy place in Carmyle wood. August. Stem 2—3 feet high, branched, scabrous, reddish. Leaves petioled 3 or 5 parted, pale beneath—lobes lanceolate, *serrated*, the middle one long and largest. *Flowers small of a pinkish colour, in thick*

umbels or corymbs at the top of the stems or branches, smelling strong. An infusion of the leaves vomits and purges briskly;—but it is a coarse medicine.

ORDER II. SUPERFLUA. In this order the florets of the centre have both stamens and pistils; those of the circumference, pistils only, which thus appear to be superfluous.

GENUS XVIII. TANSY, *Tanacetum*. Calyx imbricated, hemispherical—florets of the circumference 3-cleft, obsolete, sometimes wanting—receptacle naked—seed with a membranous crown.

Species I. *Common Tansy*, T. Vulgare. Banks of the Clyde at Merryton, below Uddingston, at Westhorn & Bogle's hole. At Fauldhouse near Lesmahagow, abundant, August. Stem 1—3 feet high, erect, slightly branched. Leaves alternate, embracing the stem, *bipinnatifid, cut, serrated*. Flowers yellow, in a flat terminal corymb. Cultivated in gardens. The leaves are bitter and are used to flavour puddings &c;—when laid over meat they preserve it from the flesh fly. The tops of flowers or seeds are excellent vermifuges *i. e.* for worms.

GENUS XIX. MUGWORT, *Artemisia*. Calyx ovate or rounded, imbricated—receptacle naked or hairy—florets of the ray awl-shaped.

Species I. *Mugwort*, *A. Vulgaris*. Hedges and waste places, but not so common as formerly. August. About Raith &c. Stem 3—4 feet high, branched, ribbed, glabrous herbaceous. Leaves on stalks, *pinnatifid*, cut, beneath downy, above blackish green—uppermost undivided, linear, lanceolate. Flowers numerous, purplish in upright simple leafy racemes—scales of the calyx ovate downy—receptacle naked—florets few. The leaves in powder 3 j, four times a day have removed hysteric fits, after asafoetida and ether have been tried in vain.

GENUS XX. CUDWEED, *Gnaphalium*. Calyx tiled with coloured linear shining scales—receptacle naked—florets of the circumference many, thread-shaped, of the centre hermaphrodite—down rough or feathery.

Species I. *Mountain Cudweed*, *G. Dioicum*. Frequent on dry barren pastures. July. Hedge bank opposite the stone Magazine beyond Cleek-him-in Toll &c. Flowering stems 2—6 inches high, erect, leafy, ending in a corymb of 3—6 flowers. Leaves green and glabrous above, white and tormentose beneath—the root ones *spathulate*—the stem ones lanceolate. Flowers whitish or pinkish—dioecious—inner scales of the calyx often rose coloured

especially in the perfect flowers. The plant throws out long leafy prostrate shoots.

Species II. *Highland Cudweed*, *G. Sylvaticum*. At the bottom of a field at Barncluith wooden bridge, abundant. August. Stem 10—18 inches high. *erect*, decumbent at the base, slender, *downy*, branched only at bottom. Leaves *linear-lanceolate* becoming gradually smaller upwards, *downy*, especially beneath. Flowers ovate sessile, 2—3 in the axils of the upper leaves forming together a more or less interrupted spike—scales of the calyx with a broad brown border.

Species III. *Marsh Cudweed*, *G. Uliginosum*. Frequent in damp places. August, September. Deadwaters Ross, near the old gate at Avon Mill &c. Stem 6—8 inches high, upright, covered with thick down and *much* branched. Leaves linear-lanceolate about an inch long white and woolly on both sides. Flowers yellowish, small, sessile, 2—3 together in the closely placed upper leaves, forming oblong *clusters* at the extremity of the branches—scales of the calyx shining, glabrous, yellowish brown.

Species IV. *Least Cudweed*, *G. Minimum*. Sandy hills and road sides. July, August. At Tollcross &c. Stems erect 2—8 inches high, *woolly*, *slender*, *branched* or simple. Leaves *lanceolate acute cottony*,

very small, erect almost closing with the stem. Flowers ovate small 3—6 together in small lateral and terminal clusters—calyx downy—the scales awl-shaped.

Species V. *Common Cudweed*, *G. Germanicum*. Rare, in light soils. June, July. In gravel pits at Bothwell. Stem 6—8 inches high, erect, branched upwards in a *proliferous* manner *i. e.* with branch upon branch. Leaves small lanceolate cottony. Flowers axillary and terminal, in a globular head from beneath which spring 2—3 or more horizontal branches, in a *proliferous* manner, each terminated by a similar head of flowers—hence called *herba impia*. It is used in bloody flux.

GENUS XXI. COLT'S-FOOT, *Tussilago*. Calyx formed of a single row of equal, linear scales—receptacle naked—flowers *radient*—blossoms of the circumference long, linear, numerous, of the disc few—down simple—scape single flowered.

Species I. *Colt's-foot*, *T. Farfara*. Very common in fields and banks. March, April. Embankment above Ross bridge &c. Flower-stalk 4—8 inches high, woolly, clothed with lanceolate scales, appearing before the leaves. Leaves roundish heart-shaped, angular-toothed, smooth above downy beneath. Flowers yellow 1 to each *scape*, rayed about an inch in diameter.

Under the colloquial name of *dishilago* the herb is a great specific with rural herbalists. The leaves are used for coughs and consumptions and also for scrofula; when dried they are the basis of cephalic snuffs.

GENUS XXII. BUTTER-BUR, *Petasites*. Calyx imbricated with 2 rows of imbricated scales—flowers *not* radiant—down simple—scape many-flowered.

Species I. *Butter-bur*, *P. Vulgaris*. Common in meadows and by water sides March, April. On the sands below Hamilton bridge &c. Flowering stems 4—8 inches high, thick, downy, clothed with oblong reddish bracteas. Leaves extremely large often from 2—3 feet broad, roundish heart-shaped, unequally toothed, on very long stalks. Flowers pinkish in a dense ovate panicle appearing before the leaves. The root is said to be the best known remedy for putrid and pestilential fever.

GENUS XXIII. GROUNDSEL, *Senecio*. Calyx cylindrical, its scales linear, equal, with several smaller ones at the base, their lips often brown—receptacle naked—down simple, sessile.

Species I. *Common Groundsel*, *S. Vulgaris*. Abundant in waste ground and as a weed in gardens, all summer. Stem rather smooth, about a foot high. Leaves *stem-clasping pinnatifid*, sinuated, toothed,

blunt, linear-oblong, shining green. Flowers *scattered*, small, yellow, all tubular—calyx glabrous, scales lanceolate, short, pressed close, with their lips blackish. No weed is more common than this. It is emetic in infusion, and the leaves are a good application to boils.

Species II. *Stinking Groundsel*, *S. Viscosus*. At Rawhead Kilbride. June—October. Stem 10—20 inches high *much* branched, *spreading*. Leaves sessile, pinnatifid, toothed, of a foetid smell and covered like the stem with viscid hairs. Flowers with the ray *rolled back*, golden yellow, in a lax terminal corymb—scales of the calyx loose and hairy.

Species III. *Wood Groundsel*, *S. Sylvaticus*. Frequent in sandy and dry heaths and woods. July. Sandy brae at Chatelherault; at Tollcross &c. Stem 2—3 feet high, *stiff*, *upright*, hairy, corymbose. Leaves lyrate *pinnatifid*, lobed, and toothed, rather finely divided. Flowers smaller than the above species, *rays rolled back*, pale yellow, loosely corymbose—scales of the calyx short, glabrous.

Species IV. *Ragwort*, *S. Jacobaea*. Too common in pasture lands. July, August. Stem 2—3 feet high, tough, branched, corymbose glabrous or a little cottony. *Leaves* blackish green, lyrate, bipinnatifid,

straddling—lobes wedge-shaped, toothed, the lowest segments broadest. Flowers with the ray spreading, *large*, bright deep yellow, in a wide corymb—calyx glabrous, short and rather cylindrical. The flowers with alum dye wool yellow, and without alum of a deep green. A poultice of the leaves is excellent for removing pains of the joints.

Species V. *Marsh Ragwort*, S. Aquaticus Common in marshes and watery places. July, August. Damp places in Barncluith green &c. Stem 2—3 feet high, upright, branched, corymbose. Leaves light green, lyrate serrated—lower ones *ovate*, not cut. Flowers with the rays *spreading*, yellow, not so numerous as in the preceding species—calyx hemispherical—seed-vessels glabrous.

Species VI. *Broad-leaved Groundsel*, S. Saracenicus. In an ait in the Clyde, a little below Bothwell bridge, and on the Clyde below Hamilton bridge. July, August. Stem 3—4 feet high, stiff, upright. Leaves *sessile*, *lanceolate*, acutely serrated, rather glabrous, sometimes slightly downy—base wedge-shaped. Flowers with the rays spreading, yellow, much smaller than the last with broader florets of the circumference—calyx scales lanceolate. A very powerful astringent.

GENUS XXIV. GOLDEN-ROD, *Solidago*. Calyx closely tiled—receptacle naked—florets of the ray few (yellow)—seed-down, sessile, simple.

Species I. *Common Golden-rod*, *S. Virgaurea*. Woods and thickets. July—September. By the Clyde at Bothwell Castle and between Carmyle and Kenmuir. Stem 1—2 feet high, downy, angular, generally branched and panicked. Lower leaves stalked, elliptical hairy—upper ones lanceolate, narrow at both ends. Flowers rayed, yellow, clustered in form of a branched thyrse or panicle, rays 5—9 oblong, spreading. This plant is an excellent styptic, for which purpose it was formerly imported from Italy at a high price; but upon being discovered to be a *native* of this Island it fell into disuse.

GENUS XXV. ELE CAMPANE, *Inula*. Calyx hemispherical—scales tiled, inner ones linear slender, outer ones ovate, weak, leaf-like—anthers with bristles at their base—receptacle naked—seed-down hair-like, rather rough.

Species I. *Elecampane*. I. *Helenium*. Calder below Cleland; Knoll on Barncluith green near the wall; Banks of the Avoa at Barncluith, abundant. June—August. Stem upright 3 or more feet high, striated and downy, branched towards the top.

Leaves embracing the stem, ovate, slightly toothed, wrinkled, downy beneath—the lower ones about a foot long, and 3 or 4 inches broad. Flowers in large heads, yellow, single, terminating the stem and branches. The root is esteemed a good pectoral, and is used for hooping cough.

GENUS XXVI. LEOPARD'S-BANE, *Doronicum*. Scales in two rows, equal, longer than the disk—receptacle naked—down simple wanting on the florets of the ray.

Species I. *Great Leopard's-bane*, *D. Pardalianches*. A few plants by Barncluith burn at Castlehill. Stem 2—3 feet high, hairy, slightly branched. Leaves broad, soft and pliable, scabrous—root ones heart-shaped, with long stalks—middle ones spatula heart-shaped—upper roundish heart-shaped. Flowers large yellow, handsome, terminal, solitary, rayed—rays long, linear 5-toothed at the tip. Not properly a native.

GENUS XXVII. DAISY, *Bellis*. Calyx hemispherical, simple, its scales all equal in length—receptacle naked, conical—seed-down none.

Species I. *Daisy or Gowan*, *B. Perennis*. Abundant in pastures from spring to autumn. Leaves all from the root, reverse ovate, crenate, veined. Scape one flowered—flower with a white or pinkish ray and a

yellow disk. This humble but beautiful flower is a universal favourite. It was in the days of chivalry the emblem of love, and was frequently borne at Tournaments both by ladies and by knights. The pungent roots boiled in milk are applied externally in scrofula—the leaves are slightly acid.

GENUS XXVIII. OX-EYE, *Chrysanthemum*, Calyx hemispherical—scales in several rows, tiled, scarious on the edges—receptacle naked—no seed-down.

Species I. *Ox-eye or Great Daisy*, *O. Leucanthemum*. Abundant in dry pastures. June, July. Stem 12—18 inches high, rigid, angular, often purplish and hairy at bottom. Leaves embracing the stem, oblong lanceolate blunt, upper ones toothed or serrated—lower ones obovate and pinnatifid. Flowers like the gowan, large, the ray white and the disk yellow. The young leaves are eaten for salads at Padua, as well as in other places.

Species II. *Corn Marigold or Gule*, *C. Segetum*. Corn fields. June—August. Whole plant smooth. Stems one foot or more high, striated, branched, each branch terminated by one large yellow flower resembling marigold. Leaves embracing the stem, lobed above, toothed or serrated below. An inveterate and abundant weed

in ill cultivated districts. In some botanical works a compliment is paid to the Edinburgh Farmers at the expense of their neighbours in the words "rare about Edinburgh." The words ought to be "rare in all the well cultivated districts in Scotland."

GENUS XXIX. FEVERFEW, *Pyrethrum*. Calyx hemispherical—scales tiled with membranous or scarious torn margins—receptacle naked—fruit crowned with a border.

Species I. *Common Feverfew*, *P. Parthenium*. Rocks and waste places. July. Inside of a wall between the Wood Yett and Barncluith burn; rocks at Corhouse Mill; rocks between Wellshot and Cambuslang &c. Stem 1—2 feet high, branched and furrowed. Leaves more or less divided, *bipinnate* plane, stalked—leaflets ovate, cut, decurrent slightly hoary. Flowers with a white ray and yellow disk, in solitary heads, sometimes on simple, but oftener on *branched* peduncles. The plant has a strong smell, is bitter and aromatic, and yields an essential oil by distillation.

Species II. *Scentless Feverfew*, *P. Inodorum*. Common in fields and waste places. August—October. Stem about 1 foot high, angular, with diffuse branches. Leaves lyrate, *pinnatifid*, *sessile*, lobes *linear*, *thread-like*, 2 or 3 parted, deep green, glabrous. Flowers large, terminal solitary,

the ray white, the disk yellow, very convex seed-down not divided—scales of the calyx black on the edge.

GENUS XXX. WILD CHAMOMILE, *Matricaria*. Calyx hemispherical or nearly plane, imbricated with scales whose margins are membranaceous—receptacle naked, almost cylindrical—no seed-down.

Species I. *Wild Chamomile*, *M. Chamomilla*. Occasionally in fields as at Merryton &c. June—August. Stem erect, about a foot high, much branched, yellow, glabrous. Leaves *lobed pinnate*—leaflets linear, *not cut* or lobed. Flowers with a white truncate ray and a yellow conical disk, solitary, terminal—receptacle rather flat—scales of the calyx white, rather blunt. When the heads of flowers are bruised, they smell somewhat like common Chamomile. In Finland an infusion of this plant is used for consumption.

GENUS XXXI. CHAMOMILE, *Anthemis*. Calyx hemispherical, imbricated with nearly equal scales whose margins are membranaceous, fruit crowned with a membranaceous border or pappus.

Species I. *Corn Chamomile*, *A. Arvensis*. Occasionally in corn fields at Haughhead &c. July. Stem much branched, upright, downy. Leaves *bipinnate*, lobes *linear, lanceolate*, downy or hoary green.

Flowers with a broad white ray which is at length bent back, disk yellow, large, terminal—peduncles often with leaves—chaffs longer than the florets.

Species II. *Stinking Chamomile*, A. Cotula. Corn fields and waste places. July, August. Stem about a foot high, much branched, glabrous. Leaves bipinnatifid, smooth—leaflets awl-shaped, 3-parted, bright green. Flowers rather small, terminal solitary, the rays white oval reflexed at night, the disk yellow convex. The herb has a disagreeable smell when rubbed between the fingers—especially the flowers. It is also covered with minute glands which blister the hands of those who pull it.

GENUS XXXII. YARROW, *Achillea*. Calyx ovate imbricated—receptacle plane chaffy—florets of the ray 5—10 roundish, obcordate—seed down none.

Species I. *Yarrow or Milfoil*, A. Millefolium. Abundant in pastures and by road sides. June—August. Stem erect furrowed 1—2 feet high, hairy. Leaves bipinnate—leaflets blunt—lobes awl-shaped, toothed, very numerous, hairy beneath. Flowers small, white or pinkish both in the rays and the disk, numerous, in a flatish branched terminal corymb. The flowers yield an essential oil; an infusion of the herb is stimulant and stomachic.

Species II. *Sneeze-wort*, A. *Ptarmica*. Frequent in meadows and pastures. July, August. Road side between Hamilton and Dalsersf &c. Stem 1—2 feet high, erect, glabrous. Leaves lanceolate, pointed, sharply serrate, serratures equal. Flowers with whitish ray and disk, in a flatish terminal corymb. The leaves in powder when snuffed up the nostrils produce sneezing.

ORDER III. POLYGAMIA FRUSTRANEA. In this order the florets of the centre have both stamens and pistils; those of the ray neither, or only abortive pistils. There is here but one Genus.

GENUS XXXIII. KNAFWEED OR BLUE-BOTTLE, *Centaurea*. Receptacle bristly—downsimple—blossom of the ray funnel formed, irregular, longer than those of the disk.

Species I. *Black Knapweed*, C. *Nigra*. Abundant in meadows, pastures and by road sides. July, August. Stem 1—3 feet high, tough scabrous, branched and angular. Leaves lanceolate—upper ones *ovate* serrate or not cut—lower ones *angulate lyrate*. Flowers solitary purple, without rays—little scales of the calyx *ovate*, *ciliate*, cilia capillary erect, brown.

Species II. *Blue-bottle*, C. *Cyanus*. Frequent in corn fields. July. About Smiddy croft &c. Stem 2—3 feet high, erect *cotony*, much branched, angular. Leaves

linear quite *entire*, the lowest toothed. Flowers usually blue—the disk purple, the rays funnel-shaped, blue, cleft into sharp segments. The flowers produce a fine water colour not inferior to ultramarine. Water distilled from the flowers is good in inflammation and weakness of the eyes.

Species III. *Greater Knap-weed*, *C. Scabiosa*. By a wall near the Quarry at Port Dundas; by the bridge over the Calder? July, August. Stem 1—3 feet high, nearly cylindrical, upright, alternately branched, leafy, furrowed. Leaves dark green, roughish and slightly hairy, *pinnated*, lobes *lanceolate*. Flowers purple, solitary terminating—those of the circumference linear, slender—calyx globose, large, scales *ovate cottony*, fringed—the scales blackish, the fringe pale. This and the first species belong to the genus *Phrygia* of Persoon.

CLASS XX.

GYNANDRIA CONSISTING OF PLANTS THE STAMENS OF WHICH ARE SITUATED UPON THE STYLE OR COLUMN, ABOVE THE GERMEN.

The structure of the flowers in this class is *very curious*. In some of the most com-

mon species the flower springs from a sort of screw shaped stalk. The blossom consists of 5 petals irregularly shaped, the two innermost uniting over the others in the form of an arch. In the place of the pistil and sixth petal, we have the nectary which forms the lower lip ; to the inner edge of which adheres the shaft, which with its stigma is scarcely discernible. As a specimen of this class, examine the *Orchis* a very common flower in our meadows ; it is easily known by its leaves which are covered with black spots, and still more readily by the mass of handsome purple flowers which terminate a stalk with sheathing leaves, somewhat in the form of a soldiers feather. In some species the root is composed of a pair of solid bulbs ; in others it consists of a set of oblong, fleshy substances, tapering towards the ends, like the fingers of the hands. The orders are marked by the number of stamens in each flower.

ORDER I. MONANDRIA, One stamen.

GENUS I. ORCHIS, *Orchis*. Flowers gaping—lip spurred on the under side at the base—anthers 1—2 contained in a little pouch formed by a folding of the upper lip of the nectary.

Species I. *Purple Orchis*, *O. Masculula*. Frequent in meadows and pastures. June, July. At Wood Yett &c. Root with 2

undivided bulbs. Stem 8—12 inches high. Leaves broad, spotted with dark purple. Flowers purple, uniformly coloured, in an oblong, blunt, loose spike—lip hanging down, base white with a few purple spots, *3-lobed*, crenulate blunt, middle lobe 2-cut—petals pointed, inner upright spread, outer reflexed *3-ribbed*—spur conical, ascending, *as long as* the germen. Salep one of the most nutritive species of food at present known, and extremely useful in travelling, and in sea voyages, is made from the roots of the Orchis. The spikes of flowers are the *long purples* or *dead-men's fingers*, which served to compose Ophelia's garland. *Hamlet*, Act IV.

Species II. *Marsh Orchis*, *O. Latifolia*. Frequent in marshes and meadows. June. About Airdrie &c. Stem 12—18 inches high, leafy, hollow. Leaves long, somewhat erect, sharp pointed, sheathing the stem almost to the top, mostly without spots. Flowers pale red, or purple, in a dense spike with long bractees—lip *slightly 3-lobed*, the sides reflexed—inner segments of the perianth connivent, outer reflexed—spur *shorter* than the germen—bractees longer than the flowers.

Species III. *Spotted Orchis*, *O. Maculata*. Frequent in Meadows and pastures. June, July. About Allington Farm &c. Stem

9—18 inches high, straight, slender, solid. Leaves lanceolate, generally spotted with black, becoming narrower upwards till at length they become nearly awl-shaped. Flowers purple—lip marked with lines and spots, nearly *flat*, 3-lobed, side lobes toothed, middle lobe *pointed*—upper leaves of the blossom *approaching*, side ones spread—spur cylindrical, *shorter* than the germen, bractees small subulate, as long as the germen: This and the former species have the bulbs of the root *palmate* or hand-shaped.

GENUS II. GYMNADENIA, *Gymnadenia*. Blossom ringent—lip spurred at the base beneath—anthers (pollen-mass) not covered, *approaching*.

Species I. *Fragrant Gymnadenia*. G. Canopsea. Occasionally in meadows and moist pastures in alpine situations. June—August. Road side about half-way between Hamilton and Lanark; banks of the burn forming the N. boundary of New Monkland Parish; Cathkin hills &c. Bulb of the root *palmate*. Stem 8—16 inches high. Leaves from the root, bright green, linear-lanceolate, keeled, slender. Flowers pale purple, smelling like clover—lip bluntly 3-lobed, middle segment not nicked—side petals much spread—spur bristle-like, *twice* as long as the germen—pollen-mass (the anther of Linneus) green. This plant is easily

known by its long flexuose spur, and the delightful fragrance of its flowers.

GENUS III. HABENARIA, *Habenaria*. Blossom ringent—lip spurred at the base beneath—differing from the former genus only in having the glands of the pollen-masses (anthers) distant.

Species I. *Green Habenaria*, H. Viridis. In Daldowie woods. June, July. Stem 5—10 inches high, leafy. Leaves linear-ovate, upper lanceolate. Flowers in a loose spike, dull greenish tipped with brownish purple—lip small *linear* 3-toothed, side lobes *pointed*, middle lobe very *short*—spur *short*, 2-lobed, purse-like—anther purplish—pollen-mass yellow—bractees half as long again as the flowers.

Species II. *White Habenaria*, H. Albida. In a hilly pasture above Castlemilk; by the water of Brieich south from Whitburn. June. Stem 5—10 inches high, leafy, striated. Leaves lanceolate oval, upper ones lanceolate pointed. Flowers in a dense narrow spike about 2 inches long, numerous, small whitish, sweet scented, the lip green—lip 3-parted, lobes acute, the middle divided—spur blunt one third the length of the germen—anther yellowish—pollen-mass yellow.

Species III. *Butterfly Habenaria*, H. Bifolia. At Kenmuir, and in pastures on the

N. side of New Monkland Parish. May, June. Stem 12—18 inches high, leafy, ribbed, smooth, 2 or 3 leaved at the bottom. Leaves ovate, linear or lanceolate, the root ones mostly *two* the stem ones 3—4 very small. Flowers about 12, yellowish white, in a long spike, rather large—lip green hanging down, *linear, entire*—spur thread-shaped twice the length of the germen.

GENUS IV. BIRD'S-NEST OR TWAYBLADE, *Listera*. Blossom irregular—lip 2-lobed—column without wings—anther fixed by its base—pollen farinaceous.

Species I. *Common Twayblade*, L. *Ovata*. In woods and moist pastures. June. Burn side between Chantonhall and Brandon road; at Blantyre Priory; in Hamilton and Bothwell woods &c. Stem 12—18 inches high, two leaved below the middle of the stem, opposite, sessile, curvately ribbed. Flowers in a narrow, long, lax, spike, small, yellowish-green, pedicelled—calyx⁴ segments ovate, the two side petals linear-oblong—lip long, bifid, without any teeth at the base—column of fructification with an *appendage* in which the anther is placed.

Species II. *Heart-leaved Twayblade*, L. *Cordata*. Said to grow on Tinto; it is found plentifully among the heather on the Carrick hills. July, August. Stem 3—4 inches high, very slender. Leaves two on

the stem, small, *heart-shaped*. Flowers few, very small, distant upon the spike greenish brown—segments of the calyx spreading, the 2 inner ones the smallest—lip with 2 teeth at the base, bifid at the apex. This small plant is very readily overlooked.

Species III. *Bird's-nest*, L. *Nidus-Avis*. At Crawfordland Castle near Kilmarnock, abundant. May. Stem 8—16 inches high, hollow, leafless, with alternate sheathing scales, and like the whole herb brown, no part of it green. Flowers brownish, numerous, in a rather lax spike—petals blunt—lip reverse heart-shaped, twice as long as the petals—column of fructification without any appendage on the back. The above station is out of the bounds assigned to this work; but as the plant is both rare and curious the transgression may be pardoned.

GENUS V. HELLEBORINE, *Epipactis*. Lip spurless very concave at the base, the extremity undivided or 3-lobed, the middle lobe large, and as it were jointed—pollen farinaceous.

Species I. *Broad-leaved Heleborine*, E. *Latifolia*. Abundant all over the woods about Hamilton, Bothwell, Jerviston &c. In the plantation below Hamilton bridge especially towards Logans. July, August. Stem 1—3 feet high, green, leafy. Leaves large, closely sheathing the stem, *ovate*, or

roundish ovate, ribbed, below the middle of the stem. Flowers small purplish, in a narrow, long, loose spike—lip pointed, long, yellowish green, slightly deflexed, bifid—lower bractees *longer* than the flowers.

CLASS XXI.

MONOECIA HAS STAMENS AND PISTILS IN SEPARATE FLOWERS ON THE SAME PLANT.

In this class the stamens and pistils are not found in the same but in different flowers. Those which have stamens only termed barren flowers ; but those which have pistils, produce a germ furnished with seeds, and are termed fertile flowers.

ORDER I. MONANDRIA, Male flowers with one stamen.

GENUS I. HORNED PONDWEED, *Zannichellia*. The male flowers without calyx or blossom, filaments lengthened, erect, anther oblong. Female flowers with a calyx of one leaf, no blossom, germens 4 or more, stigmas shield-shaped, seed stalked uncovered.

Species I. *Horned Pondweed*, *Z. Palustris*. In the Clyde below Hamilton bridge, and near the ford at Bogle's hole. August. Stem slender, floating, branched, round,

leaty and smooth, with the habit of a *potamogeton*. Leaves linear, grassy, sessile, narrow, acute and entire, 2 or 3 inches long. Flowers axillary, minute, from a membranaceous bractea—fertile one on a short stalk, from the base of which arises *one* anther, borne on a long white filament—anther 4-celled—stigmas undivided—capsule keeled, toothed at the back.

GENUS II. WATER-STARWORT, *Callitriche*. Male flowers, with or without 2 leaves or bracteas—Female flowers with 2 styles, and a pericarp of 4 deep compressed lobes—cells 1-seeded.

Species I. *Vernal Water-starwort*, *C. Verna*. Abundant in ditches pools and slow streams. At Deadwaters Allington &c. Stems thread-shaped and branched varying in length according to the depth of the water. Leaves small clustered at top, upper and floating ones oval and stalked, 3-ribbed, lower ones 1-ribbed linear, rarely all linear. Flowers minute and inconspicuous—male ones with one stamen and a yellow anther on a slender white filament—fertile flowers with 2 styles—fruit bearing *peduncles* short with 2 bracteas at their base—fruit regularly 4-sided, each portion bluntly keeled at the back. The British species of *Callitriche* have been lately determined by Mr Arnot.

ORDER II. TRIANDRIA, Male flowers with 3 *stamens*.

GENUS III. REED-MACE, *Typha*. Male flowers in a cylindrical head or ament—calyx indistinct, 3-leaved—blossom none. Female flowers in a cylindrical ament, below the males—calyx a villous hair—blossom none, seed one, placed in a capillary down.

Species I. *Reed-mace* or *Cat's-tail*, T. *Latifolia*. Abundant in the Deadwaters at Allington Farm. July. Stem 4—6 feet or more high, straight, round, not branched, jointless, leafy below. Leaves upright, *linear*, *flat*, pointed, rather sword-shaped, nearly as long as the culm. Flowers in a long, cylindrical, brownish black ament or head—male flowers above, rather leafy, yellow—females below, brown. A tall remarkable plant, generally misnamed in this part of the country the Bull-rush. Rubens has put it into the hand of Christ as a sceptre, when he was saluted as a king in mockery by Herod's Soldiers.

GENUS IV. BUR-REED, *Sparganium*. Male and female flowers—ament reddish—calyx 3-leaved—blossom none. Female flowers with a 2-cut stigma—berry juiceless, one seeded.

Species I. *Branched Bur-reed*, S. *Ramosum*. Common in ditches and by river banks. July. Ditches by the road side between Strathaven and London hill; pond at Coalshill Jerviston &c. Stem 3 or more

feet high, divided above into a few branches. Leaves long, linear, 3-edged at the base, sides concave. Flowers on alternately branched peduncles, in globular heads—upper heads male, numerous—lower heads female. I have seen this plant growing to the height of seven feet in a marshy place by the high road on the W. side of the bay of Luce.

Species II. *Unbranched Bur-reed*, S. Simplex. Marsh below Hamilton bridge; in the bog, Robroyston. July, August. Stem and *peduncle* not branched, about 1—2 feet high, round. Leaves long 3-edged at the *base*, sides *flat*. Flowers on *unbranched* peduncles, in globular heads the lowest flower-head sometimes pedicelled—calyx greenish.

Species III. *Floating Bur-reed*, S. Natans. Lochs to the N. of Old Monkland. July. Stem and leaves flat, flaccid, somewhat pellucid, reticulate, floating. Flowers in globular heads on an unbranched stalk—female flower-heads 2 or 3, the lowest pedicelled—male head usually *single* terminal—stigma short ovate. This is well distinguished from the two former species by its long *flat* grass-like leaves. It constitutes the genus *Platanaria* of Dodonaeus.

GENUS V. CAREX OR SEDGE, *Carex*. Flowers forming a tiled spike or catkin—

calyx only a husk-like scale—barren flowers with no perianth—fertile flowers with an urceolate swollen corolla of one piece which at length covers the 3-sided nut—stigmas 2—3. Nearly allied to the grasses, but of a harsher texture.

1. *With one simple spike.*

Species I. *Dioicous Carex*, C. Dioica. Occasionally in bogs. June. Bog at Dun-sire &c. Root creeping. Stalk 4—10 inches high, *smooth*, 3-sided, not branched, slender. Leaves *thread-shaped*, *smooth*, shorter than the stalk, somewhat 3-sided. Flower-spike *dioicous*, male spike linear, acute upright, about an inch long, female spike shorter—fruit ovate, short, rather upright, rough on the upper edge—stigmas 2—glumes with a green keel. This has the male and female spikes on separate culms or stalks.

Species II. *Flea Carex*, C. Pulicaris. In muddy bogs. June. Carfin Mill; Kenmuir bog &c. Root fibrous. Stalk 8—10 inches high, smooth, slender. Leaves bristle-shaped, smooth. Flower spikes linear erect, stamens in the upper part—fruit oblong, roundish, *sharp* at both ends, bent back, brown, very shining—chaffs brownish gray, longer than the fruit.

2. *With many sessile spikelets of flowers—the upper part of each spike sterile i. e. having stamens only, the under part with a style and 2 stigmas.*

Species III. *Prickly Carex*, *C. Muricata*.
 Rock below Cathcart Castle; near Airdrie
 and near Holytown. June. Stalk 1—2
 feet high, slender, 3-sided, sides flat, angles
 acute, rough. Leaves narrow, keeled,
 longer than the culm. Spikelets ovate,
sterile at the top, 8 or 10 collected into an
 oblong cylindrical branched spike—fruit
 ovate, tip 2-toothed, margin ciliated, ser-
 rated, yellow brown, broad, rather large—
 husk brown with the margin and keel green
 —bracteas ovate keeled, bristly at the end.

Species IV. *Great Carex*, *C. Vulpina*.
 Banks of the Avon above Hamilton; banks
 of the River Clyde in the Parish of
 Rutherglen. May—July. Stalk about 2
 feet high, leafy at bottom, thick near the
 spike, angles very rough. Leaves broad
 deep green, longer than the culm, rough at
 the keel and margin. Spikelets 3 or 5
 together, crowded, with stamens *above*,
 forming a spike 2 or 3 inches long—fruit
 ovate, pale, rough at the margin of the
 lengthened beak, and bifid at the tip.

Species V. *Lesser Carex*, *C. Teretiuscula*.
 Deadwaters Allington Farm. June. Stalk
 18 inches high, roundish, bluntly 3-sided,
 sides convex, angles rough. Leaves erect
 rigid, sheathing the culm more than half
 way—sheaths leafless at the base deeply
 striated. Spikelets *panicked*, sessile ovate

—husks brown, with a white scariose edge fruit ovate, tip 2-toothed, angles fringed, serrated.

Species VI. *Panicled Carex*, *C. Paniculata*. With the former also in a bog near Daldowie, and at Kenmuir. June. Roots in immense tufts. Stalks 2—3 feet high, naked above, 3-cornered, with the angles very scabrous. Leaves erect, firm, light green, very numerous. Spike loose, *branchy*, branches distant, lower ones naked at bottom, top drooping—fruit ovate, angles margined above, *margin* ciliate serrate, tip 2-toothed. The broad white scariose margin of the husks or glumes gives a silvery appearance to the whole spike.

3. With many sessile spikelets of flowers—the tip or upper part of each spike fertile or with one pistil and two stigmas—the lower part with stamens only.

Species VII. *Little Prickly Carex*, *C. Stellulata*. Frequent in marshes. May, June. Wrangham Loch Holytown &c. Root fibrous. Stalk 6—12 inches, bluntly 3-sided. Leaves deep green, upright, forming a spreading tuft. Spikelets mostly four, rather distant, short roundish, prickly stellate—fruit ovate spreading in all directions when ripe, tip 2-toothed—margins roughish.

Species VIII. *White Carex*, *C. Curta*. Abundant in the bogs at Kenmuir, and in the bog at Dunsyre. June. Stalk 7—14

inches long, with 3 rough angles. Leaves very narrow, upright pale green. Spikelets mostly 6, close, cylindrical, silvery white—fruit *ovate, acute, longer* than the cordate glume—husk skinny, tender, whitish green—bractea leaf-like, with the rib ending in an awn.

Species IX. *Oval Carex*, C. *Ovalis*. In bogs and marshy places. June. Marsh beyond Possil, about Jerviston &c. Stalk 8—12 inches high, fistulous, with rough corners, leafy at the base. Leaves deep green, flat, as long as the culm. Spikelets elliptical, reddish green, mostly six, rather close together, fruit *ovate*, margined, margin ciliated, tip with 2 short teeth—bractea leaf-like, as long as the spike, soon falling off.

Species X. *Remote Carex*, C. *Remota*. Occasionally in moist woods and by ditch banks. May, June. About Daldowie, Carmyle &c. Stalk 1—2 feet long, weak, lax, with 3 roughish corners. Leaves slender upright, pale green. Spike very long, at length drooping, spikelets small, *ovate*, whitish 3 or 4 lower ones very distant, the rest closer, rather naked—fruit *ovate, acute*, tip slightly 2-cut, edge blunt, longer than the husks—bractea leaflike, stem clasping.

4. With flowers which have stamens or pistils only in distant spikes—barren spike mostly single—bracteas leaf-like, often sheathing—stigmas *three*.

Species XI. *Pendulous Carex*, *C. Pendula*. Damp woods. May, June. By the Clyde above Blantyre Priory; by the Avon at Haugh-head and above Barnclüith very abundant. Stalk 3—6 feet high, firm, 3-sided, glabrous. Leaves half an inch broad, stiff, dark green, hard, glaucous beneath. Spikes 5—7, *drooping, cylindrical*, very long, compact, uppermost male, others female—fruit *ovate*, beaked, densely *imbricated*—bracteas long, broad, leaf-like.

Species XII. *Wood Carex*, *C. Sylvatica*. Occasionally in woods. June. Jerviston woods; wood between Cambuslang and Blantyre; road leading from Chatellherault to Avon &c. Stalk 2—3 feet high, leafy, 3-sided, sides convex, glabrous, slender. Leaves narrow, roughish, light green, shorter than the culm. Barren spike single, fertile ones about 4, slender, distant, long, thread-like—fruit as long as the husks, loose, ovate, 2-cut at the beak—glume ovate membranous, awned—bracteas leaf-like, sheathing, half as long as the foot-stalks. The fruit has a very long beak.

Species XIII. *Short-spiked Carex*, *C. Spirostachya*. Marshes, Mugdoch Castle, and on the hills of Lanarkshire. July, August. Culm a foot high—leaves long smooth—sheaths shorter than the flower-stalks—fertile spikes about 3, distant, erect, ovate,

dense, many flowered—fruit ovate, triangular, ribbed, smooth with a deeply cloven beak membranaceous at the orifice. With regard to this species the reader had better consult the British Flora of Dr Hooker, page 393.

Species XIV. *Pale Carex*, C. Pallescens.

- Frquent in marshy places, and woods. June. Stalk 10—18 inches high, triangular, rough at the angles, much overtopped by the bractea. Leaves narrow, pale, yellowish. Sterile spikelet terminal, fertile ones 2—3, ovate cylindrical, *shortly* stalked—fruit pale green, *ovate*, tumid, obtuse—glumes ovate, yellowish, ribs green.

Species XV. *Yellow Carex*, C. Flava.

Frequent in turfy bogs. May, June. Stalk 6—12 inches high, 3-sided, rather smooth, leafy below. Leaves pleasant green, broadish, flat, longer than the culm. Sterile spike distinctly *stalked*, female spikes 3, close, *elliptical*, rather distant—fruit yellowish green, spreading, ovate, beaked, beaks *bent back*, 2-toothed—glumes ovate, yellow, edge white, keel green.

Species XVI. *Two-ribbed Carex*, C. Binervis. On dry heaths. June. Hill by the road side as you approach Frankfield Loch; hills at Walston. Stalk 1—2 feet high, smooth, deep glaucous—bracteas distant like the leaves. Female spikes 3, cylindri-

cal, lower very distant—fruit reddish brown, elliptical, with 2 *green ribs*, tip 2-lobed—glumes blackish, acute, smooth, rib green.

Species XVII. *Vernal Carex*, C. *Verna*. Dry heaths and pastures. April, May. Stalk 3—12 inches high. Leaves short, rather broad—lower bractees small but leafy, upper ones very minute. Spikelets *approaching*, sterile one single, early distinguished by its yellow anthers, fertile ones 2—3, ovate—fruit ovate, acute, *pubescent*.

Species XVIII. *Pill Carex*, C. *Pilulifera*. Frequent in moors. June. Kilbride, New Monkland &c. Stalks 6—12 inches long, lying down, slender, weak, sharply 3-sided. Female spikes 2—3 close, elliptical, roundish, male spikes lanceolate, slender, acute—fruit round like a pill, *acute* and *downy*, green, tip not notched—glumes ferruginous, edge white, rib green.

Species XIX. *Pink Carex*. C. *Panicea*. Common in marshy places and bogs. June. Road side between Motherwell Mill and Camp Bleachfield; bog Daldowie and Kenmuir &c. Stalk smooth weak, 8—10 inches high, angles blunt, sides rounded. Leaves very glaucous, shorter than the culm—bractea much shorter than the culm. Male spikelet one, occasionally two—fertile spikelets 2 or 3, cylindrical, rather distant—fruit

ovate, blunt, tip not notched—husks *ovate, smaller* than the fruit.

Species XX. *Glaucous Carex*, *C. Recurva*. Moist meadows and moors. June. Bog near Daldowie. Stalks 10—15 inches high, 3-sided, glabrous. Leaves mostly from the root, very glaucous, shorter than the culm. Sterile spikelet an inch long, **linear** (sometimes 2) fertile ones *densely tiled* with the roundish, rather blunt fruit—sheaths of the bractea scarcely any—fruit *ovate globose, slightly downy*, entire at the small point.

With 2 styles.

Species XXI. *Tufted Carex*, *C. Caespitosa*. Common in bogs and damp woods. May. Stalk 10—16 inches high, very *acutely angled*. Leaves *narrow*, long, flaccid, somewhat glaucous, as long as the culm. Male spikelets one (or two) upright, oblong, 3-sided—female ones mostly 3, *distant*, the lower with short foot-stalks—fruit *ovate, obtuse, pierced at the top*, at first pale green, at length blackish—bracteas setaceous, *earred* at the base, ears large—glumes shorter than the fruit.

Species XXII. *Straight-leaved Carex*, *C. Stricta*. In bogs. April. In the bog at Dunsyre; at Kenmuir and near Daldowie. Stalk 2 or more feet high, *acutely angular, straight*. Leaves *long, straight, narrow*,

linear, rough, filamentous and often *reticulated* at their sheathing base—bracteas short somewhat leafy with ears at the base—sheaths none. Fertile spikes nearly sessile, cylindrical elongated closely tiled, with about 8 rows of fruit—fruit ovate, somewhat acute plane above on each side—husks lanceolate dark brown. In this the roots are much tufted, in the former species they are creeping.

5. With barren and fertile flowers in separate spikes. Barren spikes 2 or more. Stigmas 3, except in *C. Acuta*.

Species XXIII. *Acute Carex*, *C. Acuta*. In moist meadows and wet pastures. May. At Hamilton. Stalk 2—3 feet high, acutely angular scabrous. Leaves broad, scarcely glaucous, rough—bracteas long leaf-like, sheaths none—fertile spikes long cylindrical acuminate slender erect in fruit—stigmas 2—fruit oval swelling somewhat acuminate, entire at the point.

Species XXIV. *Bog Carex*, *C. Paludosa*. Common by river sides &c. May. Stalk 2 feet or more high, upright, angles acute. Leaves very long, glaucous, upright—bracteas longer than the culm. Male spikelets 3 or 4 brownish black, *bellied*—fertile spikelets 3, cylindrical, narrowed, slender, blunt—fruit ovate, *ribbed*, as long as the glume—glume lanceolate *awned*.

Species XXV. *Bankside Carex*, C. *Riparia*. Banks of Rivers &c. April, May. At Allington, Carmyle, Kenmuir &c. Herb blackish green, rather glaucous. Stalk 2—3 feet high firm upright, sharply angled. Leaves in tufts broad long—bractees very long—sheaths scarcely any. Barren spikelets 3 or 5 close 3-sided, female ones 3, cylindrical, narrow at top—fruit *oval many ribbed*, beak 2-forked, very short—glumes awned.

Species XXVI. *Smooth Carex*, C. *Lævigata*. Wet woods E. of Mugdock Castle. May. Stalks 2—3 feet high, 3-sided, smooth. Leaves upright, broad, light green, smooth, very long sheathed—bractees long, overtopping the culm, upper with short sheaths or none. Male spikelets usually 2, female spikelets 3, *cylindrical* slender distant—fruit ovate pointed ribbed green smooth, *beaks* 2, deeply cut spreading—glumes ovate oblong nearly as long as the fruit awned—seed 1, filling the fruit, 3-sided.

Species XXVII. *Crewet Carex*, C. *Ampullacea*. Occasionally in bogs and watery places. June. Wrangham Loch near Holytown &c., abundant. Stalk upright, 2 feet high, angles smooth below, rough above the lowest spikelet. Leaves involute, slender, upright, glaucous—bractees without sheaths, the lowest overtopping the

stem. Male spikes 3 or 4, thread-like, near each other—fertile ones 2 or 3, distant, *cylindrical*, blunt, upper nearly sessile, lower ones stalked (lower peduncle with 2 small bracteas)—fruit pale yellowish, inflated, somewhat globose, terminating rather suddenly in an awl-shaped apex, which is slightly bifid.

Species XXVIII. *Bladder Carex*, *C. Vesicaria*. Bogs and watery places. June. In the bog Possil, and in a bog near Loudon hill. Stalk 1—2 or more feet, upright, *acutely* 3-sided. Leaves broad, upright pale green very long—bracteas long *leaf-like*, sheathless, higher than the culm, female spikes 2 or 3, slender acute light brown, *oblong*, inflated, beaked, tip 2-forked—glume ovate lanceolate pale ferruginous or tawny, smaller than the fruit.

Species XXIX. *Hairy Carex*, *C. Hirta*. Bogs and moist woods. June. Woods at Cambuslang, Hamilton and Jerviston, and on the Clyde at Allington. Stalk 1—2 feet high, smooth, upright, leafy, somewhat smooth up to the lower spikelet. Leaves upright, acute, downy on the upper surface—sheaths very roughly haired above—bractea leaflike as long as the spike, Male spikes 2 lanceolate, female, 3 *oblong* distant, lower one shortly foot-stalked—fruit ovate *ribbed*, pointed rough haired, with a bifid

beak—glumes glabrous sometimes longer and sometimes shorter than the fruit.

ORDER III. TETRANDRIA, Male flowers with 4 stamens.

GENUS V. PLANTAIN SHOREWEED, *Littorella*. Male calyx 4-leaved, corolla 4-cleft, stamens long—female flowers no calyx, corolla slightly 4-cleft, styles long, seed a nut.

Species I. *Plantain Shoreweed*, *L. Lacustris*. Frequent by banks of Lochs and rivers. June, July. Lochs in Old Monkland &c. Plant stemless glabrous. Leaves all from the root, linear, rush-like, smooth, convex beneath, dilated at bottom, rather sheathing. Flowers upright white—male flower-stalked, solitary, flower-stalk with a pellucid reticulated membranaceous bractea about the middle, female flowers 2 or 3 in the axils of the leaves with a style nearly as long as the scape. The roots send out many rooting runners or fibres and thus in a short time cover inundated sandy places with tufts of leaves 1 or 2 inches long.

GENUS VI. ALDER, *Alnus*. Flowers forming a tiled catkin—barren flowers with the scales of the catkin 3-lobed and 3-flowered, calyx single 4-parted—fertile flowers with a 2-flowered scale, no calyx, styles 2, fruit compressed.

Species I. *Common Alder*, *A. Glutinosa*. Common in moist woods and by stream

sides. May. A pretty large tree. Leaves roundish wedge-shaped, blunt, lobed, serrated, somewhat glutinous, villous in the axils of the ribs beneath. The wood is valuable for piles, pipes, sluices, and for such works as are intended to be constantly under water. It is said to have been used under the Rialto at Venice. It is an excellent dye—the young shoots dye yellow—with a little coperas yellowish gray—shoots cut in March dye a cinnamon colour and a fine tawny when dried and powdered—the catkins dye green—the fresh wood the colour of rappee snuff. The wood is used for clogs and pattens; and the bark by fishermen for their nets.

GENUS VII. NETTLE, *Urtica*. Male flower with a single calyx of 4 leaves, containing the cup-shaped rudiments of a pistil—female flowers with a single calyx of 2 leaves—pericarp 1-seeded, shining.

Species I. *Small Nettle*, *U. Urens*. Frequent by road sides and in waste places. June—October. Roots *fibrous*. Stems 12—18 inches high. Leaves like the whole herb light green, opposite *elliptical* 3 or 5 ribbed acutely serrated. Racemes of flowers in pairs, nearly simple, shorter than the petiole—stipule *reflexed*. This nettle though smaller than the following species is more poisonous when touched.

Species II. *Great Nettle*, U. Dioica. Abundant by banks and hedges. July, August. Root creeping. Stems 2—3 feet high. Leaves like the whole herb dark green opposite heart-shaped ovate-lanceolate, largely serrated. Racemes much branched, longer than the petiole—stipules ovate *erect*. Plant mostly dioicous, The juice of the plant itself and of the Dock are immediate remedies for the sting. Cloth cordage and paper are made of the stalks dressed as hemp.

ORDER IV. POLYANDRIA, Male flowers with many stamens. This order contains many well known Trees.

GENUS VIII. WATER MILFOIL, *Myriophyllum*. Barren flowers with an inferior calyx of 4 leaves, 4 petals and 4 sessile stigmas—nuts 4 sessile somewhat globular 1-seeded.

Species I. *Spiked Water Milfoil*, M. Spicatum. In Clyde as at Camp Dalzell—in the Lochs Old Monkland &c. July, August. Plant floating. Stems slender, much branched, comb-like. Leaves 4 in a whorl, finely pectinated and always below water. Spikes slender, 3—5 inches long—male flowers reddish interruptedly spiked *leafless*—female flowers axillary, stigmas woolly—bractees ovate, not cut, 4 to each whorl.

GENUS IX. CUCKOW-PINT, *Arum*. Spatha one-leaved, cone-shaped twisted or rolled spirally at the base—spadix naked at the tip, bearing the stamens in the middle, with germens at the base—anthers in several rows—berry 1-celled, 1-seeded.

Species I. *Common Cuckow-pint*, *A. Maculatum*. In woods and hedges. May. Woods Hamilton and Bothwell—by the upper wall of Craignethan Castle—by the brink of the Avon at Barncluith very abundant, (bank of a burn at Loudon Castle.) Plant glabrous stemless. Root tuberous fleshy. Leaves all from the root hastate-sagitate lobes bent back, spotted, very acrid, stinging the mouth like nettles when chewed. Spatha erect, bellied, pale green, coloured within—spadix *club-shaped*, coloured at the tip, at its base are the germens and sessile anthers—berries fine red, juicy. Root stimulant—starch is made of it.

GENUS X. SALAD-BURNET, *Poterium*. Flowers collected into heads, the upper ones fertile—calyx 4-lobed, coloured, 3-scaled on the outside, petals none—male flowers with 30 stamens, female ones with 2 germens, 1 or 2 styles, and radiated stigmas—the 2 germens or pericarps are immersed in the hardened angular tube of the calyx.

Species I. *Common Salad-burnet*, P. *Sanguisorbia*. Dry pastures, far from common. About Dalbeth. July. Root woody. Stem 1—2 feet high, somewhat *angular*, without spines. Leaves pinnate—leaflets roundish serrate, smooth. Flowers in heads the female ones uppermost, stigmas exserted—peduncles naked, terminal. The leaves taste and smell like cucumber, and are eaten in salad: There are great authorities among agriculturists for and against the admission of this plant into our pastures as a food for cattle.

GENUS XI. OAK, *Quercus*. Calyx of male flowers commonly 5-cleft, no corolla, stamens 5 to 10—female flowers with one style, stigmas 2 to 5—seed one ovate.

Species I. *British Oak*, Q. *Robur*. Woods and hedges. April, May, Hamilton wood &c. This the most common species here, has nearly sessile oblong leaves, broader above, with acute sinuses and blunt angles—the fruits *i. e.* the catkin or spike 2—3 upon a *long* peduncle. This noble British tree feeds our herds, shelters our persons, and protects our commerce,

“ Stems the vast main, and bears tremendous war,
To distant nations, or with sov'reign sway,
Aves the divided world to peace and love.”

Species II. *Sessile-fruited Oak*, Q. *Sessiliflora*. Woods and hedges occasionally.

April, May. At Jerviston &c. This has stalked leaves, which are oblong smooth and more equally and regularly lobed than the former—but the best mark is—fruits clustered upon a very *short* stalk or sessile. The wood of this is said to be much inferior to the former species; while others assert that it is superior to it for ship building.

GENUS XII. BEECH-TREE, *Fagus*. Barren flower in a catkin—calyx in several segments—blossom none—stamens 5 to 20—fertile flowers with a double calyx, the outer inferior prickly, in several deep segments, 2—3 flowered, inner superior 5—6-cleft, no blossom, styles 5 to 6—nuts 2—3, loosely invested with the outer spreading calyx.

Species I. *Common Beech*, *F. Sylvaticus*. Woods and hedges common. May. A handsome tree—leaves ovate, obsoletely serrated—prickles of the outer calyx simple—stigmas three. The wood of this tree is much used by the Turner and Cabinet-maker, and for various economical purposes.

GENUS XIII. BIRCH, *Betula*. Barren flowers in a catkin, calyx a ternate scale, blossom none, stamens 10 to 12—fertile flowers in a catkin, calyx a shield-like 3-lobed, 3-flowered scale, no blossom, styles 3—nut winged, soon falling.

Species I. *Common Birch*, *B. Alba*. Woods and ravines. May. A well known

tree—leaves ovate acute somewhat deltoid, unequally serrated, nearly smooth. Wood used for Machinery, Turnery, wooden shoes and pattens. It may also be said to be the *universal* wood of scots Highlanders, and of Schoolmasters,

—————“ afflictive birch,
Cursed by unlettered, idle youth.”

Species II. *Dwarf Birch*, B. Nana. On the estate of Bertram near Carnwath. May. A small shrubby plant 1—2 feet high with orbicular crenate leaves on short stalks—the fertile catkins are small and at the extremity of the branches. This is almost the only shrub which the inhospitable north spares to the poor Laplander.

GENUS XIV. HAZEL, *Corylus*. Male flowers with a calyx which is one leafed, scale-like, one-flowered, no blossom, stamens 8—female flowers with a calyx of 2 lanceolate leaves, styles 2—nut ovate.

Species I. *Hazel-nut*, C. Avellana. Common in woods. March, April. Leaves ovate, heart-shaped pointed—young branches hairy—stipules oblong, ovate. It flowers the first of our trees. The charcoal is used by painters for crayons. The nuts are well known.

GENUS XV. CHESNUT, *Castanea*, Barren flowers in a long cylindrical catkin, calyx 1-leaved, 6-cleft, stamens 5 to 20—

fertile flowers with a 4-lobed much muricated involucre, calyx 5—6-lobed, styles 6—nut 1-seeded (the chesnut) surrounded by the large prickly involucre or husk.

Species I. *Horse Chesnut*, *C. Vulgaris*. Abundant especially about Hamilton. May. A large and beautiful tree. Leaves lanceolate, with acuminate serratures, naked underneath. This tree is said to have been brought by the Roman Emperor, Tiberius Cæsar, from Sardis to Lydia in Italy, whence it was transplanted into France, and laterly into England:—some maintain that it is a native of Britain. The wood was formerly used instead of Oak, and it is still used in Italy for making Casks. The fruit is the well known chesnuds which are used at the table.

ORDER V. MONDELPHIA, Stamens united into one set.

GENUS XVI. FIR, *Pinus*. Barren flowers in crowded catkins, scales peltate, anthers 2, one celled, sessile—fertile flowers in an ovate catkin with closely tiled 2-flowered scales—calyx none—pericarp 1-seeded, terminated by a long winged appendage, and covered with the tiled scales, forming a cone or fir-top.

Species I. *Scotch Fir*, *P. Sylvestris*. Cultivated for timber. Tree evergreen. Leaves in pairs stiff—cones generally in pairs, ovate,

conical, acute as long as the leaves, rounded at bottom—tips of the scales very pyramidal. The fir tree of our plantations is not the native tree as found in the Highlands, but was brought from Canada not more than half a century ago. This circumstance is sufficient to explain the cause of the great deterioration in the growth and quality of our fir plantations, so much talked of at present.

CLASS XXII.

DIOECIA, CONSISTING OF SUCH PLANTS AS HAVE BARREN OR MALE FLOWERS, ON ONE INDIVIDUAL, AND FERTILE OR FEMALE ONES, ON ANOTHER OF THE SAME SPECIES.

ORDER I. DIANDRIA, Male flowers with 2 stamens.

GENUS I. WILLOW, *Salix*. Barren flowers in a catkin, calyx a scale, blossom none, nectary 1 or more glands at the base, stamens 1 to 5—female ones with a bifid style, capsule 1-celled, 2-valved—seed downy.

1. *Leaves serrated, smooth, or nearly so.*

Species I. *Bay-leaved Willow*, *S. Pentandra*. Banks of rivers and watery places.

Banks of the Clyde below Hamilton bridge and at Dalbeth—marsh near Kenmuir. June. A small tree—branches shining—leaves elliptical lanceolate, crenulate, crenules glandular, resinous, light green, shining, leaf-stalks with small yellow glands—sterile catkins broad—stamens 4 to 7—scales round hairy at bottom. Known from its large broad very bright and shining leaves.

Species II. *Rose Willow*, S. *Helix*. Frequent on the banks of the Clyde as at Cambusnethan &c. April. A slender tree about 10 feet or so high—branches tenaceous, gray and purple, shining—leaves bitter, lanceolate pointed serrate smooth, rather glaucous beneath—catkin long thick, style long thread-like, stigmas linear, capsules woolly white.

Species III. *Yellow Willow*, S. *Vitellina*. Frequent on the banks of the Clyde—at Jerviston. May. A middle sized tree—branches erect, yellow, shining—leaves nearly sessile, lanceolate, acute, shining above, rather silky below, serrated, serratures cartilaginous—ament cylindrical—stigma nicked.

Species IV. *Bedford Willow*, S. *Russelliana*. In plantations. April, May. A tall tree of rapid growth—branches shining, very tough, flexible—leaves lanceolate, ser-

rated pointed smooth—aments greenish lax—germens on stalks, awl-shaped, smooth, much longer than the scales.

Species V. *Crack Willow*, *S. Fragilis*. In hedge rows &c. April, May. A large tree with crooked branches—small branches brittle at their origin—leaves on stalks ovate-lanceolate, acute, serrate, glabrous on both sides, shining above—cathins long, cylindrical erect, the barren ones yellow, fertile ones greenish—stamens 2 to 3—sides pubescent, much ciliated, about as long as the germen.

Species VI. *Two-coloured Willow*, *S. Bicolor*. Banks of the Clyde a little above Glasgow. April, May. A twiggy bush, growing in an upright wand-like form with dark mahogany coloured stems—leaves elliptical acute between toothed and serrate smoothish glaucous beneath, veined rather hairy, revolute, blackish when dry—catkin scarcely an inch long—germen stalked lanceolate silky—stamen short, anther, roundish. Chiefly found in the Highlands.

Species VII. *Long-leaved Willow*, *S. Petiolaris*. Possil Marsh N. side of the Canal. April. Becoming a tree—branches dark or brownish, lax, slender—leaves grayish green, lanceolate serrate smooth glaucous beneath—germens ovate silky stalked—catkins short, stigmas sessile, 2-lobed. In

this species the leaves are covered with silky hairs. A very rare willow.

2. *Leaves nearly entire, all shaggy, woolly or silky.*

Species VIII. *Creeping Willow*, S. Repens. Frequent, on moist heaths and in marshes. May. A small shrub—stem creeping, rooting, very branchy, branches entangled—leaves rather revolute, not in the least notched, elliptical, lanceolate, rather naked above, glaucous and silky beneath—catkins many lateral—stigmas 2-parted. A very common shrub in moorland places.

Species IX. *Gray Willow*, S. Cineria. In woods. May. On the banks of the Avon above Barncluth &c. A tree from 20—30 feet or so high—branches smooth shining, the youngest pubescent—leaves scarcely nicked, ovate-lanceolate pointed, green and hairy above, reddish beneath glaucous rather villose and reticulately veined—catkin short very dense, style very long 4-cut—stipules heart-shaped serrate.

Species X. *Water Willow*, S. Aquatica. Woods and damp hedges frequent. April. Banks of the Clyde above Hamilton &c. A small tree or shrub with a dull gray bark and an erect stem and branches—leaves rather serrate, obovate elliptical, pubescent, flat, rather glaucous beneath and also rather veiny and hairy, scarcely wrinkled grayish

—buds woolly—stipules rounded toothed. This resembles the above species.

Species XI. *Eared Willow*, *S. Aurita*. Frequent in woods and hedges. May. In Hamilton wood &c. A small bushy tree with straggling branches—leaves somewhat serrate, obovate, blunt with a deflexed point, villous on both sides, reticulately veined, crisped or waved, grayish above—catkins very short—stipules variously formed.

Species XII. *Sallow Willow*, *S. Caprea*. Abundant in woods and hedges. April, May. A tree which distinguishes itself in the spring, by being covered with blossoms before the leaves appear—branches shining, small ones pubescent—leaves variously shaped, mostly ovate, serrated, waved, smooth above, and woolly and veined beneath—catkin early ovate—capsules bellying, villous—stipules recurved. This is an extremely common species.

Species XIII. *Pointed Willow*, *S. Accuminata*. Banks of the Kelvin. April, May. A small tree resembling the above species but less—branches rather smooth, youngest somewhat silky—leaves 3 inches long lanceolate-oblong, pointed waved, somewhat crenated, smooth and green above, silky or woolly beneath—catkins

early, ovate, cylindrical—capsule narrowed ovate pubescent—stipules kidney-shaped.

Species XIV. *Common Osier*, *S. Viminalis*. Frequent in marshes. April, May. A large tree when allowed to grow—branches very long, wand-like, silky—leaves spread 7—10 inches long, waved, not in the least notched, green above, silvery and silky beneath—catkins cylindrical, early, very hairy—style long—capsules ovate, silky. This is the most useful of the osier tribe, and is much used by Coopers &c.

Species XV. *White Willow*, *S. Alba*. Woods and damp fields. A large tree of rapid growth—bark green—branches many spreading—leaves elliptical lanceolate acute serrate silky on both sides, lower serratures glandular—catkin terminal long very slender many flowered, stigmas 2-parted, capsules ovate, rather smooth. This is the Huntingdon Willow.

Species XVI. *Small-leaved Willow*, *S. Parvifolia*. In a bog at Hillend beyond Airdrie. April, May. A small shrub of a foetid smell, with a prostrate stem—branches many entangled wand-like 18 inches long leaves about half an inch long, elliptical, scarcely cut, hooked, glaucous and silky beneath—female catkin ovate dense—style short thick—stigmas blunt thick deeply divided, stipules ovate entire.

ORDER II. TRIANDRIA, 3 stamens in the male flowers.

GENUS II. CRAKEBERRY, *Empetrum*. Male flowers, calyx 3-parted, with many tiled scales, blossom 3-petaled, lobes turned over, stamens very long (rarely 9,) anthers opening lengthwise on the sides—female flowers with a 3-parted calyx, blossom 3-petaled, style 1 short style 9-rayed, berry flattened 6—9 seeded.

Species I. *Crakeberry*, *E. Nigrum*. Frequent in mountain heaths. Moors Cathkin Kilbride and Crawford. A small trailing shrubby plant with a brownish outer and yellow inner bark, 8—16 inches long—branches rough with the remains of the petioles. Leaves in fours, oblong blunt, fringed, turned over at the margin so as to meet behind, somewhat 3-cornered, with a linear keel. Flowers minute, axillary, sessile, towards the top of the branches, surrounded by a bractea resembling an outward 3-parted calyx, whitish, petals purple with brownish anthers—female plant with a redder stem, leaves in fives, dark green, pistil black, berries in dense clusters, globular, brownish black when ripe. The berries are not agreeable; when boiled in alm water they yield a dark purple.

GENUS III. BUTCHERS-BROOM, *Ruscus*. Male flower with a calyx of 6 leaves, fila-

ments combined at the base, anthers 3—6—female flowers with a 6-leaved calyx, a tubular nectary, 1 style, 1 stigma, and a berry 3-celled, having 2 seeds in each cell.

Species I. *Prickly Butchers-broom*, *R. Aculeatus*. Bothwell woods. March, April. Root branchy. Plant 1—3 feet high, stiff, tough, evergreen, sending out from the side many short stiff, branches. Leaves mucronate, ribbed, alternate, sessile, pungent, flower-bearing. Flowers on the upper surface of the leaves, naked, white, stamens soldered together at bottom, violet, yellow at top—female flowers succeeded by large hard red berries, of a sweetish taste, having two large orange coloured seeds in each. The roots are said to be useful in dropsy.

ORDER III. TETRANDRIA, 4 stamens in each male flower.

GENUS IV. GALE, *Myrica*. Male flowers in catkins which have concave scales—female flowers also in catkins with concave scales, styles 2, berry one-seeded.

Species I. *Sweet Gale*, *M. Gale*. In bogs and moorish ground, not common in this county. May. About Frankfield Loch, abundant. A shrubby plant, or small bush. Stems many shrubby, 2—4 feet high, dividing into several slender branches, and covered with a dusky or rus-

set-coloured bark, sprinkled with white dots. Leaves lanceolate rather serrated, convoluted, alternate, stalked, stiff, above an inch long, of a bitter taste, and agreeable odour. Flowers in catkins appearing before the leaves—fruit a resinous spotted berry. A sort of wild myrtle. The catkins boiled throw up to the surface of the water a sort of wax from which candles are made.

ORDER IV. PENTANDRIA, 5 stamens in each male flower.

GENUS V. HOP, *Humulus*. Male flower with a 5-leaved calyx, no corolla—female flower with a 1-leaved calyx no corolla, styles 2, seed one, within a leafed calyx.

Species I. *Common Hop*, *H. Lupulus*. At Craignethan, Barncluith, hedge below the Relief Church Hamilton, road side near Tollcross. July. Stems climbing, angular, very long, striated, rigid with minute prickles. Leaves opposite, stalked, heart-shaped, undivided or 3 and often 5-lobed, serrated, veiny and harsh—stipules entire glabrous. Flowers greenish yellow, the fertile ones or catkins ovate pendulous at length scariose, female spike aromatic bitter. The stem always twines from right to left, or from east to west by south, in the direction of the sun. The female flowers are extensively used in brewing beer.

ORDER V. OCTANDRIA, 8 stamens in the male flower.

GENUS VI. POPLAR, *Populus*. Male flowers in a catkin, scales flat, torn at the edge, stamens 8 to 20—female flowers with four 4-cleft stigmas, capsule 2-celled and 2-valved.

Species I. *White Poplar*, *P. Alba*. In plantations. March. A tall tree with a straight trunk covered with a smooth whitish bark—young branches woolly—leaves heart-shaped roundish, lobed, toothed, black green above, tomentose and snow-white beneath—catkin ovate oblong. The roots of this and the following species are long and horizontal, throwing up numerous young plants.

Species II. *Trembling Poplar or Aspen*, *P. Tremula*. Frequent in damp woods. March, April. A large tree—small branches smooth—leaves nearly orbicular, toothed, both sides smooth, tremulous—catkin oblong, hairy. This tree derives its name from *Espe* the German name for Poplar.

Species III. *Black Poplar*, *P. Nigra*. Frequent in woods and plantations. March. A tall tree with smooth bark of an ash-colour—leaves deltoid, pointed, serrate, both sides smooth—fertile catkins cylindri-

—roots not throwing up young plants, preceding species.

DER VI. ENNEANDRIA, 9 stamens in male flowers.

NUS VII. MERCURY, *Mercurialis*. Male flowers with a single 3-parted calyx; stamens 9—12, anthers of 2 globose lobes. Female flowers with a similar calyx, 2 styles, cap-celled, cells 1-seeded.

Species I. *Dogs Mercury*, *M. Perennis*. Abundant in woods and shady places.

May. By the walls of Cadzow &c. Stem about 1 foot high, with branches, upper part densely leaved. Leaves ovate, acute, opposite, stalked serrate, rough, dark green. Flowers green, small in axillary, pedunculate erect cymes. The plant yields a fine blue colour, but no means have been discovered by which it can be fixed. It is said to be medicinal.

DER VII. MONODELPHIA, stamens united into one set.

NUS VIII. JUNIPER, *Juniperus*. Male flowers in a catkin, calyx a scale, blossom 3—stamens 3—female flowers with a 3-lobed calyx, petals 3, styles 3, berry fleshy.

Species I. *Common Juniper*, *J. Communis*. Heaths and moors. May. Moors of Black-hill Lesmahagow, but very common.

dwarfish. A much branched, rigid, smooth evergreen shrub, seldom exceeding 3 or 4 feet in height. Leaves in threes, narrow, spreading, mucronate, longer than the mature fruit. Flowers in very sessile, axillary catkins — berries round blueish black with a flavour like turpentine. These are employed in the distillation of Geneva.

GENUS IX. Yew, *Taxus*. Barren flowers with a calyx which is single at the base, stamens numerous, anthers peltate, 6—8-celled, cells opening beneath—female flowers with a single urceolate scaly calyx, no style, berry fleshy, perforated at the extremity.

Species I. *Yew Tree*, *T. Baccata*. In plantations. March. At Raploch near Larkhall. A low tree, but often with a very thick trunk—stem erect—branches horizontal, 2-rowed—leaves 2-rowed, close together, very dark green, smooth, narrow like those of the fir—berries red, esteemed poisonous. It is the Irish or Florence-court Yew which is now so common in our plantations. The wood was formerly in great request among archers for making bows.

CLASS XXIII.

POLYGAMIA, CONSISTING OF PLANTS HAVING THREE DIFFERENT SORTS OF FLOWERS ON THE SAME OR ON SEPARATE PLANTS; SOME OF THEM CONTAINING PISTILS, SOME STAMENS, AND SOME BOTH.

ORDER I. MONOECIA, Flowers different on the same plant.

GENUS I. ORACHE, *Atriplex*. Perfect flower with a single, 5-partite, inferior calyx, 5 stamens, a 2-partite style and depressed one seeded fruit which is covered by the calyx—pistilliferous flower with a single 2-partite calyx, no stamens.

Species I. *Spreading Orache*, A. *Patula*. Occasionally on Ruins and waste places. July, August. Stem much branched, herbaceous, spreading, often reddish. Leaves *deltoid lanceolate* rather hastate. Flowers in small clusters on long three-stalked spikes—fruit thorny on the disk—seeds dotted. It is used as a pot herb.

Species II. *Narrow-leaved Orache*, A. *Angustifolia*. With the former species occasionally. June—August. Stem 3—4 feet long, herbaceous, spreading. Leaves

lanceolate entire, the lower ones pa
3-lobed, sometimes hastate. Flowers i
the above species—fruit hastate, smooth
tip long acute, edge not cut. S
emetic, and useful in dysentery.

GLOSSARY

OF

BOTANICAL TERMS.



G L O S S A R Y
OF
BOTANICAL TERMS.

A

ACUMINATE, pointed, tapering to a point.

Acute, sharp, ending in an acute angle.

Adnate, connected.

Aggregate, a flower consisting of a number of smaller flowers, collected into one head by means of some part (the receptacle or calyx) common to them all.

Amplexicaule, embracing the stem.

Angiospermia, the second order of the class Didynamia. See introduction page 22.

Angular stem, having edges or corners, opposed to cylindrical or round.

Anther, the summit or top of the stamen. See introduction page 17.

Awl-shaped, slender, and becoming finer towards the end like an awl.

Awn, or *arista*, the slender sharp substance growing to the valves of corn or grass, and frequently called a beard—as in barley.

Axillary, the base or bottom of the leaves or branches, on the upper and inner side.

B

BANNER, or standard, the upper large petal of a Papilionaceous or Pea-flower.

Barren, such flowers or florets as produce no perfect seed.

Beak or *bill*, a long projecting appendage to some seeds resembling the beak of a bird.

Bell-shaped, shaped like a bell.

Biennial plants, those which continue alive two years.

Bifid, cleft, or cloven in two.

Bipinnate, doubly winged.

Biternate, doubly three-fold.

Bractea, a floral leaf; a leaf different from the other leaves in shape and colour, generally situated on the peduncle, and often so near the corolla, as easily to be mistaken for the calyx.

Bulb, a large kind of bud, generally produced under ground, upon or near the roots of certain herbaceous plants, hence called bulbous—as Lily &c.

C

CÆSPITOSE, matted together.

Calyx the flower-cup, or outer green covering of the flower.

Campanulate, bell-shaped.

Capillary, hair-like.

Capitate, knob of many flowers on one stalk.

Capsule, a dry hollow seed-vessel that cleaves or splits in some determinate manner.

Catkin or *amentum*, a kind of calyx consisting of many chaffy scales, dispersed along a slender thread or receptacle, and so called from its supposed resemblance to a Cat's tail—as in the willow.

Caudex, the stock or principal body of a root.

Caulis, a stalk or stem, which elevates the leaves, flower and fruit.

Central-florets, those which occupy the central part of a compound flower.

Ciliated, fringed with soft parallel hairs.

Claw, the lower part of a petal, by which it is connected with the base.

Coloured, when a leaf or cup is of any other colour but green.

Compound leaf, when one stalk supports more than one leaf.

Compressed, a cylindrical surface more or less flattened.

Conglomerated, flowers heaped together upon a branched foot-stalk, to which they are irregularly but closely connected.

Connate, united at the base.

Cordate, heart-shaped.

Corolla, the beautiful coloured leaves of a flower, called the blossom.

Corymb, flowers not sessile as in the spike, but on their proper foot-stalk, each of which again springs out of one common fruit-stalk.

Cotleydons, the perishable, porous side-lobes of the seed, which involve, and for some time give nourishment to, the embryo plant.

Creeping-stem, creeping along the ground and sending forth little roots.

Creeping-root, as in spearmint.

Cross-shaped or *Cruciform*, } applied to flowers with 4 petals, which spread at top, in form of a cross.

Cryptogamous, those plants whose fructifications are invisible or undiscovered.

Culm, the stem of corn and grasses.

Cuneiform, wedge-shaped.

Cup double, when one cup has another surrounding its base.

Cylindrical, round.

Cyme, a mode of flowering, in which a number of slender foot-stalks proceed from a common centre, and rise to the same height.

D

DAGGER-POINTED, not gradually tapering to a point, but ending suddenly, like a dagger's blade.

Deciduous, soon falling off.

Decumbent, lying down.

Decurrent leaf, when there is no leaf-stalk, but the base of the leaf runs down the stem.

Decussated, cross-pairs.

Deflexed, bending down.

Dehiscent, opening or standing open.

Dentated, toothed.

Denticulated, set with little teeth.

Depressed, pressed down, flattened.

Dichotomous, forked.

Diffuse, spreading.

Digitated, finger-like.

Disk, centre.

Distichous, double rowed.

Divaricate, straddling.

Diverging, spreading wide from the stem.

Double calyx, one calyx within another.

Drupe, fruit such as plums and cherries.

Duplicate, doubled.

E

EAR-SHAPED, like a human ear ; also a little appendage at the base of a leaf.

Egg-shaped, like an egg.

Eliptic leaf, of an equal breadth at each end.

Emarginate, end nicked or notched.

Embracing, when the base of a leaf nearly surrounds the stem.

Ensiform, sword-shaped.

Erect, in opposition to decumbent.

Erose, gnawed, irregularly cut.

F

FACICULE, flowers collected into a bundle as in Sweet William.

Fastigiata, flat-topped.

Feathered, when the down of seeds resembles a feather.

Filament, the thread-like part of a stamen, supporting the anther, and connecting it with some other part of the flower.

Filiform, thread-shaped.

Finger-like, compound leaves, like the expanded fingers of a man's hand.

Fistulose, hollow.

Flexuose stem, changing its directions in a curve at every joint.

Floret or *floscule*, a little flower; one of the component flowers of an aggregate or compound flower.

Foot-stalk, a leaf-stalk.

Fruticose, shrub-like.

Fulcra, props, supports; certain minute

external parts, which serve either to support or defend the plants, or to promote some necessary secretion.

Funnel-shaped, a one-petalled blossom of which the lower part is tubular, and the upper part conical *i. e.* shaped like a filter or funnel.

Furcated, forked.

Furrowed, with deep lines running lengthwise.

Fusiform, spindle-shaped.

G

GERMEN or **GERM**, the seed bud; the base of the pistil, containing the rudiments of the seeds.

Gibbous, swelling.

Glabrous, smooth.

Glaucous, of a sea-green colour.

Glands, little growths or warts found on the surface of some plants.

Glandular, bordered with pores.

Globular, like a round ball.

Glomerate, congregated, crowded.

Glume, a husk, chaff; the calyx of corn and of the grasses.

Glutinous, slimy..

Granulated, beaded, resembling beads.

H

HAIR-LIKE, slender ; individed and cylindrical.

Halbert-shaped, shaped like a halbert.

Hand-shaped, resembling a human hand with the fingers open.

Hastate halbert-shaped.

Heads of flowers, where flowers grow together in compact knobs.

Heart-shaped, like a heart on playing cards.

Herbaceous stem, juicy and tender, not hard and woody.

Hirsute, shaggy, rough with hairs.

Hispid, bristly.

Hoary, covered with a very fine white silvery-looking substance.

Hollow, as in the straw.

Husk, chaff ; see *glume*,

I & J

IMBRICATE, lying over each other, like tiles on a roof.

Imperfect flowers, wanting either pistil or anther, or both,

Incrassated, thickest upwards.

Incurved, bowed inwards.

Indented, hollowed, deeply scalloped at the edge.

Individed, intire.

Inflated, distended like a bladder.

Inflexed, bent inwards.

Involucre, a calyx remote from the flower ;
restricted by Linneus to Umbelliferous
plants.

Involute, rolled inwards.

Jointed stem, with knots as in wheat straw.

Irregular flowers, where the petals want
uniformity—differing from each other in
shape or size.

K

KEEL, a name given to the lowermost petal
in a butterfly-shaped blossom, from its
supposed resemblance to the keel of a ship.

Keeled, bent like the keel of a ship or boat.

Knee-jointed, when a straw or stem is a lit-
tle bent at the joints.

Knob, a head.

Knot, a joint, as in straw and grasses.

L

LABIATE, a flower having lips.

Lacinate, cut, or as if it were torn.

Lactescent, producing a milky juice.

Lamina, a thin plate or border.

Lanceolate, spear-shaped.

Laternal, branches or flowers growing from the sides of the stem.

Leaflet, a little leaf; part of a compound leaf.

Leaf-stalk, the foot-stalk, of a leaf.

Leather-like, tough and pliable like leather.

Legume, a pod, as in pea.

Limb, upper expanded part of a blossom of one petal, opposed to the tube which is the lower part.

Linear, narrow, with the sides as nearly parallel as possible.

Lip, the upper or under division of a gaping blossom.

Lobes, rounded divisions where the segments extend nearly half way down the leaves.

Lunate, crescent-shaped; like the moon in her quarters.

Lyre-shaped, or *lyrate*, leaves cut into lateral lobes, the lower ones smallest, the upper ones, especially the terminal lobe, largest.

M

MEMBRANACEOUS, thin, shining, semitransparent, like bladder or parchment.

Mid-rib, the nerve the continuation of the leaf-stalk, which runs along the middle of a leaf.

Menopetalous, having one petal.

Mucronate, a dagger pointed leaf, sharp pointed at the end.

Muricated, covered with sharp points.

N

NAKED, destitute of leaves.

Nectary, a part of the flower secreting honey, or whatever is not calyx, corolla, stamena, or pistil.

Nerve, a simple unbranched thread running along a leaf.

Notched leaves, the edges cut something like the teeth of a large timber saw.

Nut, a species of seed, such as the hazel nut or stone of the plum or cherrie.

O

OBCORDATE, inversely heart-shaped *i. e.* with the point of the heart next to the stem or branch.

Obovate, inversely egg-shaped, *i. e.* having the narrow end next to the stem or branch.

Obtuse, blunt at the point.

Orbiculate, round and flat.

Oval leaf, as in common box-tree.

Ovary, see *germen*.

P

PALATE, any swelling or gibbosity in the jaws of the blossom.

Palmate, hand-shaped.

Panduriform, fiddle-shaped.

Panicle, a form of flowering, wherein the flowers or fruits are dispersed on peduncles variously subdivided.

Papilionaceous blossom, butterfly-shaped, as in the pea blossom.

Pappus, the down of seeds, as in dandelion.

Patent, expanding.

Patulous, open.

Pectinate, a comb-like leaf.

Pedate, bird-footed.

Pedicle or *peduncle*, a foot-stalk or fruit-stalk of a flower, or head of flowers.

Peltate leaf, shaped like a target or shield.

Pendant, hanging down.

Perennial, continuing for several years.

Perfect, a flower with calyx, blossom, stamens and pistils.

Perforated leaves, when the stem seems to go through the leaves.

Perfoliate, a perforated leaf.

Perianth, a calyx or cup placed immediately under the blossom, which is contained in it as in a cup: it is the commonest kind of calyx.

Pericarp, the seed-vessel.

Permanent, remaining till the fruit is ripe.

Personate, gaping.

Petal, the coloured leaf of a blossom, where there are more leaves than one.

Petiole, the foot-stalk of a leaf.

Pilose, hairy.

Pinnatifid, wing-cleft, cut transversely.

Pinnate, a winged leaf.

Pinnule, a wing of a winged leaf.

Pitcher-shaped, swelling or bellying out like a common jug.

Pitted leaf, when the surface is hollow between the veins.

Plicate, plaited.

Pod, a seed-vessel as in wall-flower.

Pollen, small dust contained within the anthers.

Polypetallous, having many petals.

Pomum, an apple or pear.

Pores, little holes.

Prickly, armed with prickles.

Prism-shaped or prismatic, differing from cylindrical in the circumference being angular.

Prolific or proliferous, a flower which from its own substance produces another flower.

Pubescent, clothed with soft wool or hair.

Punctate, dotted.

Purse-shaped, like a purse that draws together with strings at the top.

Q

QUADRANGULAR, four cornered.

Quadrifid, four-cleft.

Quaternate, by fours.

Quinate, five leaved.

Quinquifid, five-cleft.

R

RACEME, a cluster.

Radiate flowers, as in the daisy, where the central ones are tubular and those of the circumference narrow and strap-shaped.

Radicle, the stringy or fibrous part of the root.

Rays, the outer florets in a radiate compound flower.

Receptacle, the base connecting the other parts of fructification.

Regular blossom, regular in the figure, size, and proportion of its parts.

Reniform, kidney-shaped.

Repent, creeping.

Reticulate, veined like a net.

Retuse, bluntly notched at the end.

Revolvute, turned or rolled back.

Rhomboid, diamond-shaped.

Rigid, stiff, not easily bent.

Ringent, gaping or grinning.

Root-leaves, leaves proceeding immediately from the root.

Rugose, rugged or wrinkled.

Runcinate leaf, like the leaf of the dandelion.

S

SAGITTATE, arrow-shaped.

Salver-shaped, a blossom of one petal, the lower part tubular, the upper flat and expanded.

Sarmentose, having runners.

Scabrous, rough, rugged.

Scaly, like the skin of a fish.

Scape, a stalk supporting the flowers, but not the leaves of a plant.

Scariose, skinny.

Scrobiform, like fine saw dust.

Scymetar-shaped leaf, thick and straight at one edge, thin and arched at the other, like a scymetar.

Secund, pointing one way.

Serrated, like the teeth of a saw.

Sessile, sitting; without a stalk.

Setaceous, bristle-shaped.

Sheath-scale, a brownish membrane found at the top of the sheaths which surround the stem of grasses *i. e.* at the base of the leaves.

- Sheathing leaves*, when the base of the leaves
infolds the stem, as in the grasses.
- Shrubby*, somewhat woody.
- Silicule*, a broad short pod.
- Silique*, a long pod as in wall-flower.
- Simple*, undivided.
- Sinuated*, indented, cut along the margin.
- Sitting leaves*, having no leaf-stalk.
- Solitary*, only one flower, or one stem.
- Spadix*, a flower-stalk rising from a spathe
or sheath.
- Spatha*, a sheath, a kind of calyx as in snow
drop.
- Spathulate*, roundish or obovate.
- Spike*, a mode of flowering as in wheat and
barley, where sessile flowers are placed
alternately on a common simple peduncle.
- Spikelet*, a small spike.
- Spine*, a thorn protruded from the wood,
whereas a prickle is only a detached por-
tion of the bark.
- Spindle-shaped root*, tapering like a carrot.
- Spiral*, twisted.
- Spur*, like the spur of a cock.
- Squarose*, scurfy.
- Standard*, the upright petal of a pea flower.
- Stellate*, starry or star-like.
- Stigma*, the summit of the style.
- Stipes*, the trunk of a tree or plant.
- Stipules*, small leaves or scales situated on

each side the base of a leaf or fruit-stalk,
as in the garden pea.

Stolon, a sucker.

Straddling or *divaricate*, standing wide
from each other, making an obtuse angle
with the stem.

Strap-shaped, long and narrow like a strap.

Streaked, marked with depressed lines.

Striated, scored.

Strobilus, a cone as in the fir.

Style, the slender part of the pistil, with the
stigma at the top and the germen at the
base.

Sub, when used in composition signifies
nearly, or *somewhat*.

Sulcate, furrowed.

Superior cup or *blossom*, when either of them
are situated above the germen.

Sword-shaped leaf, as in Iris.

T

TARGET-SHAPED LEAF, with the leaf-stalk
nearly in the centre of the leaf.

Tendril, a clasper, by which plants fix
themselves to other objects.

Terminal, terminating, opposed to lateral.

Ternate, in threes.

Thread-shaped, like a piece of packthread.

Three-edged, or three-cornered.

Thyrse, a cluster.

Tiled, one leaf or scale covering an
like the tiles or slates of a house.

Tomentose, cottony or downy.

Toothed leaf, when the edges are set
little teeth.

Trailing stems, lying along the ground
not sending out roots.

Transverse, cross-wise.

Triangular, three-sided.

Trifid, three-cleft.

Trigonal, three-cornered.

Tripartite, with three divisions.

Tripinnate, three-winged.

Triternate, triply three fold.

Truncated, as if the end had been lipp
sheared off.

Tube, the lower hollow part of a one-
ed blossom.

Tubercle, a little solid pimple.

Tuberous root, consisting of many row
knobs collected into a bundle.

Tubular, like a hollow tube or pipe.

Turgid, swollen.

V & U

VALVE, the pieces that compose a
vessel ; also the chaffs of grasses and

Veined leaf, when its fibres are branc
it is *nerved* when they are unbranch

Verticillate, growing in whorls.

Vesicles, little bladders.

Vixellum, see *standard*.

Villose, covered with soft hairs.

Viscid, clammy.

Umbel, a composition of flowers where foot-stalks grow from the same centre, as in hemlock.

Umbelliferous, bearing umbels like hemlock.

Unijorm florets, when they are all alike.

Unilateral, growing from one side only.

Urceolate, pitcher-shaped.

W

WARTY, having little hard lumps or warts.

Waved, waved and full like a ruffle.

Wedge-shaped, shaped like a wedge.

Wheel-shaped, a one-petaled blossom with a flat broad border and a short tube.

Whirl or *whorl*, when leaves, flowers or branches stand round the stem like the spokes of a wheel.

Wings, the two side petals in a papilionaceous or pea-shaped blossom.

Z

ZIGZAG, having many turnings and bendings.

N. B. For the other terms see the Introduction, or Martyns "Language of Botany" which is Alphabetically arranged.

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